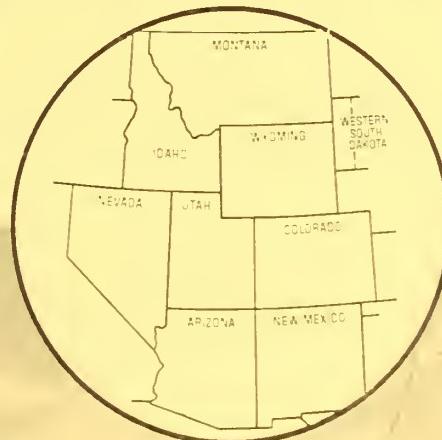


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TIMBER PRODUCTS IN THE ROCKY MOUNTAIN STATES, 1966



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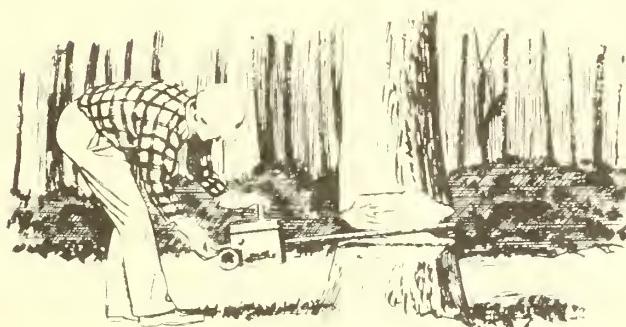
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TIMBER PRODUCTS IN THE ROCKY MOUNTAIN STATES, 1966

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and

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ABSTRACT

Reports findings of the second comprehensive survey of output of timber products in the Rocky Mountain States. Presents statistics on production of saw logs, veneer logs, pulpwood, and various other roundwood products by States and land ownership classes. Also shows saw-log production by county and volumes of plant byproducts and plant residues. Makes comparisons with 1962 output and indicates trends since 1952. Estimates are given of total removals from growing stock and sawtimber in 1966.

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FOREWORD

This report summarizes information resulting from a survey of the 1966 output of timber products in the Rocky Mountain States.¹ The survey was conducted in 1967 by the Forest Survey Project of the Intermountain Forest and Range Experiment Station, USDA Forest Service, as part of the continuing nationwide Forest Survey.

In addition to providing estimates of roundwood production from timberlands in each State, statistics are given on the following: number of sawmills, veneer and plywood plants, and papermills; volumes of plant byproducts and plant residues; interstate movement of roundwood; lumber production (U.S. Bureau of the Census estimates); and total removals from growing stock inventory.

Data for previous years and in trend discussions and comparisons came from a number of publications. Information for 1962 came largely from three sources: "Timber Resources and Industries in the Rocky Mountain States" (Wilson and Spencer 1967);² "Timber Trends in the United States" (U.S. Forest Service 1965); and a series of reports published in 1964 (Wilson, Spencer, and Spencer and Farrenkopf). A report "The Economic Importance of Timber in the United States" (Hair 1963) provides data for 1954 and 1958. "Timber Resources for America's Future" (U.S. Forest Service 1958) was the source of most of the 1952 information. A few other publications of lesser significance were used as sources of information on individual products in specific States and for certain years. Most of these publications have not been referenced in this report.

Definitions of terms, survey methods, and reliability of estimates are presented in Appendix A. Appendix B contains tables and maps showing location of active mills, and output of saw logs by production classes from individual counties.

¹The following are called Rocky Mountain or Mountain States in this report: Idaho, Montana, South Dakota (west of the 103d meridian), Wyoming, Arizona, Colorado, Nevada, New Mexico, and Utah.

²Names and dates in parentheses refer to Literature Cited, p. 44.

THE ROCKY MOUNTAIN STATES

Roundwood products output continues to rise in Rocky Mountain States

The volume of roundwood timber products harvested in the Rocky Mountain States in 1966 totaled 810 MMCF. This is an increase of 25 percent since 1962, and 79 percent since 1952. These products include saw logs, veneer logs, round pulpwood, commercial poles, mine timbers, miscellaneous industrial wood (principally house logs, shingle bolts, and specialty logs), posts, fuelwood, and farm timbers (U.S. Bureau of Census 1967).

Saw logs are still dominant but proportion in other products is increasing

Significant differences have occurred among individual products with respect to trends in recent years. Although output of all major products has increased, some have gone up substantially, others very little. Saw logs have maintained their predominance over the period 1952-66 and in 1966 accounted for 80 percent of the roundwood volume (figure 1).

However, since 1962 the total volume of other products has increased to a greater extent and, as shown in table 1, nearly all products have experienced a much greater percentage increase than have saw logs.

The big increase in veneer-log output primarily reflects the capacities of four new plants — one in Colorado, two in Idaho, and one in Montana. In 1952, only 8.9 MMBF³ of veneer logs were produced.

Diversification of product harvest from timberlands within the Mountain States has occurred much more rapidly in some States than others. And, as shown (page 2), New Mexico is the only State in which an increase since 1962 did not occur in the proportion of total output comprised of products other than saw logs.

³International 1/4-inch log rule is used throughout this report for board-foot volumes of roundwood. Lumber production is expressed in board feet lumber tally.

Table 1. — Roundwood products output, 1962 and 1966, and percent change

Product	Unit of measure	1962	1966	Percent change
Saw logs	Thousand board feet	3,819,900	4,138,719	8
Veneer logs	Thousand board feet	129,684	474,508	266
Pulpwood	Thousand standard cords	242	286	18
Commercial poles ¹	Thousand pieces	428	738	72
Posts	Thousand pieces	3,373	5,817	72
Mine timbers	Thousand cubic feet	3,170	6,882	117
Miscellaneous industrial wood ²	Thousand cubic feet	2,996	2,449	-18
Miscellaneous farm timbers	Thousand cubic feet	6,009	9,488	58
Fuelwood	Thousand standard cords	257	359	40
All products	Thousand cubic feet	649,598	809,792	25

¹Includes a small amount of piling.

²Includes products such as house logs, converter poles, shingle bolts, excelsior bolts, match stock, charcoal wood, and similar items.

State	Percentage of output in products other than saw logs	
	1962	1966
Idaho	6	18
Montana	12	18
Western South Dakota	42	56
Wyoming	6	19
Arizona	24	31
Colorado	13	23
Nevada	52	99
New Mexico	22	17
Utah	10	14
Mountain States	12	20

Saw log exports from the Rocky Mountain States in 1966 totaled about 3 MMBF. This volume went mainly to Washington.

Forty-six percent of roundwood products came from ponderosa pine and Douglas-fir

Ponderosa pine, followed closely by Douglas-fir, was the most important species for roundwood products harvested in the Rocky Mountain area (figure 2). Ponderosa pine was the leading species in Arizona, New Mexico, western South Dakota, and Utah; Douglas-fir was the most important species in Idaho and Montana. Engelmann spruce led in Colorado, and lodgepole pine in Wyoming. The 1966 product harvest from Nevada came mainly from pinyon pine and juniper cut for fuelwood and posts.

There has been no significant change in relative importance of species since 1962. However, some changes in relative proportions have occurred since 1947.⁴ As illustrated in figure 3, ponderosa pine remains predominant and Douglas-fir has substantially increased its hold as the second-place species. Engelmann spruce and the true firs have improved their positions while western white pine and western larch have become relatively less significant.

⁴ Although data are not available for 1947 roundwood volume by species, lumber production statistics for that year are considered closely indicative of the species breakdown of saw logs, and have provided the basis for proportioning 1947 saw-log volume for figure 3.

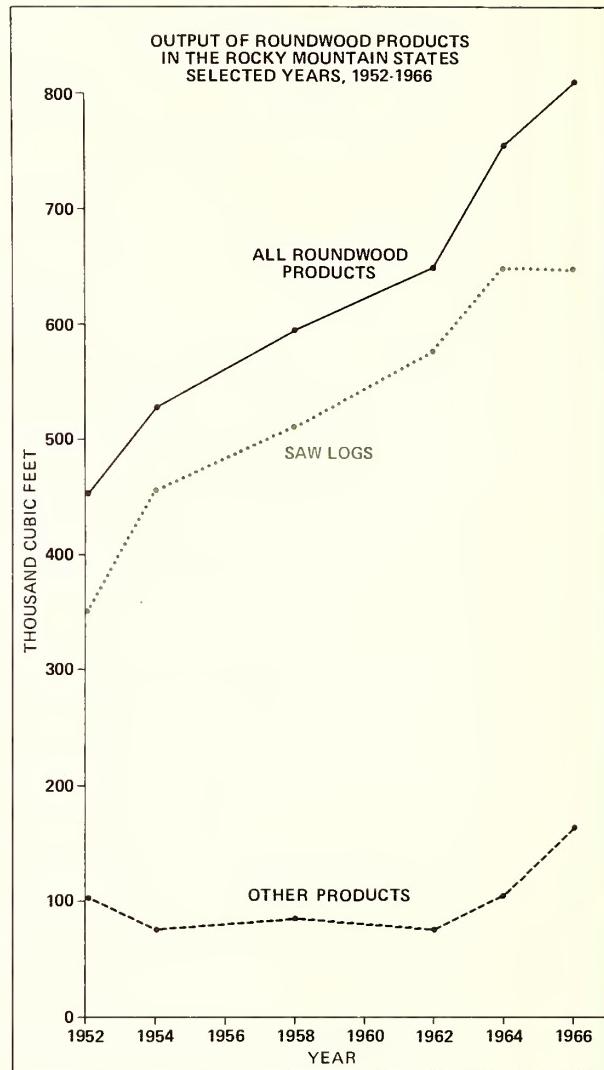


Figure 1

Public lands supplied 74 percent of roundwood timber products in 1966

National Forests were the prime source of timber products in all the Rocky Mountain States except Nevada and accounted for 63 percent of all roundwood products in 1966; in 1962 National Forests provided 57 percent (figure 4). In Colorado, Utah, and Wyoming, National Forests supplied over 90 percent of the roundwood timber products in 1966. In all nine States the proportion of products supplied by National Forests increased since 1962. Other public lands contributed 11 percent in 1966, the same proportion as in 1962.

PROPORTIONS OF TOTAL ROUNDWOOD OUTPUT
IN THE ROCKY MOUNTAIN STATES, BY SPECIES
1966

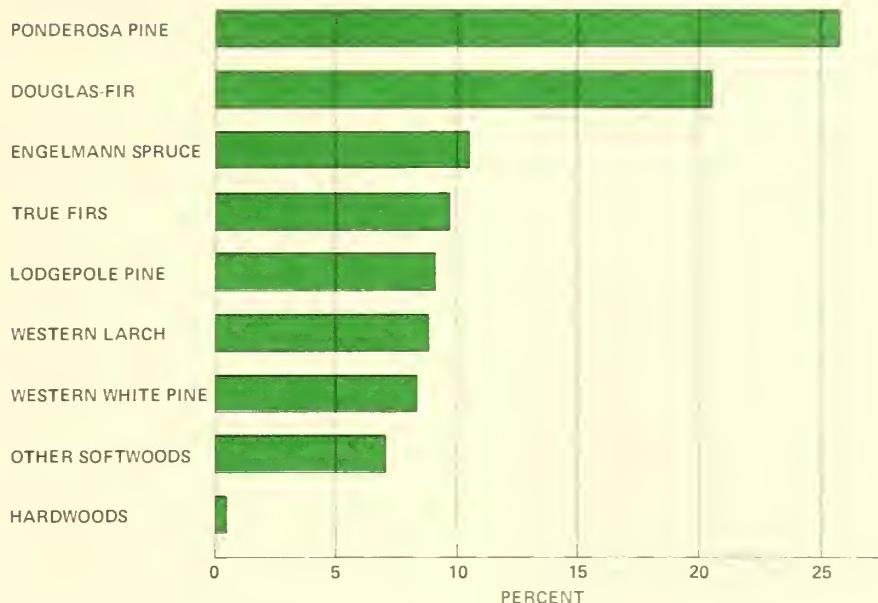
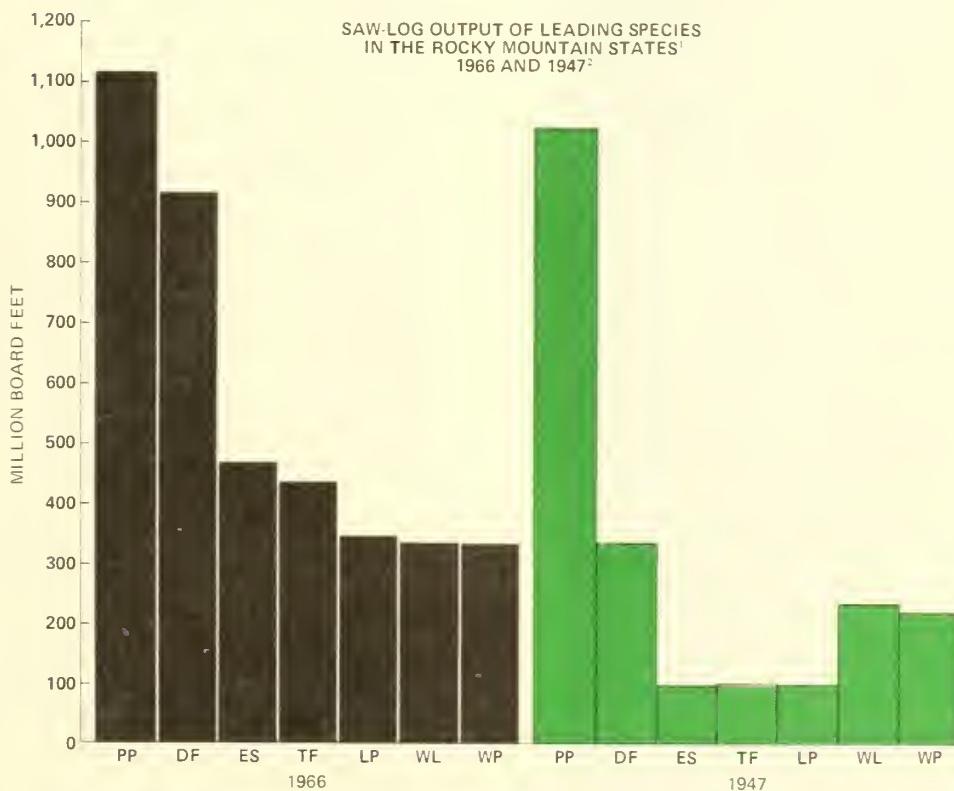


Figure 2



¹Nevada not included

²Lumber production, 1947 Census of Manufactures, MC24A, Table 6-F

Figure 3

CUBIC FOOT VOLUME OF ROUNDWOOD
PRODUCTS BY OWNERSHIP CLASS IN THE
ROCKY MOUNTAIN STATES, 1966

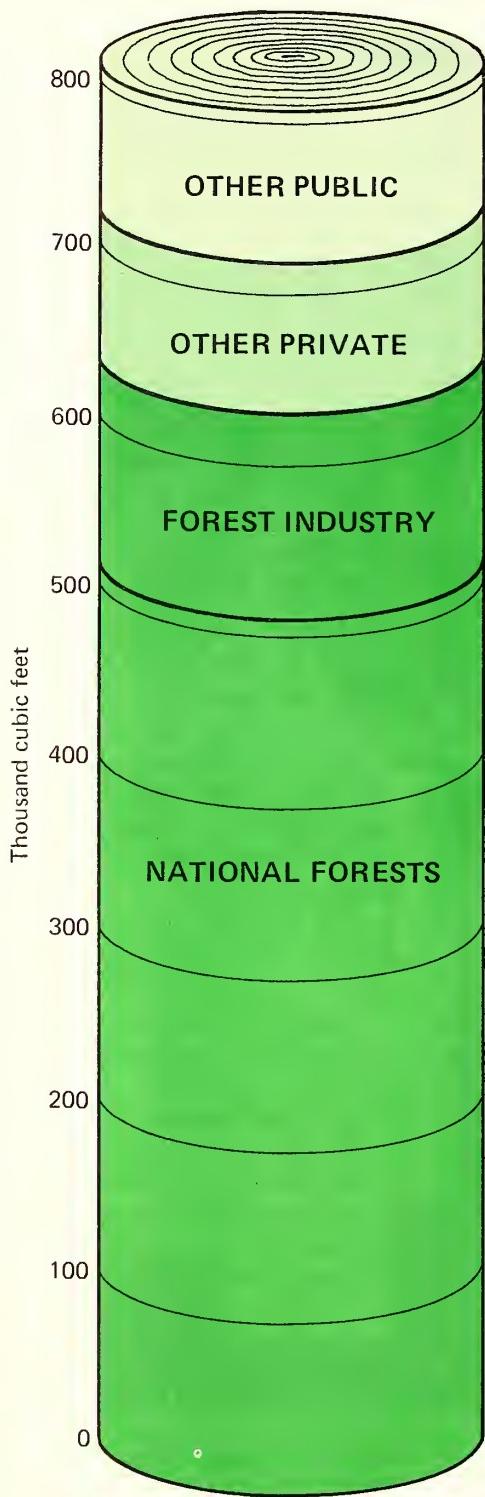


Figure 4

Forest industry lands provided 15 percent of the 1966 output — not significantly different from 1962. About 11 percent came from other private lands in 1966.

**Idaho and Montana led in output
of most roundwood products**

Idaho and Montana had the largest volume of roundwood product output and together accounted for over two-thirds of the total Rocky Mountain States output in 1966. The relative importance of States in 1966 was about the same as it had been for quite a few years, as shown in table 2.

Not all roundwood products were produced in all Mountain States, and some of them varied in relative importance from State to State. Saw logs, however, were one exception and were by far the most important product in all States except Nevada where fuelwood and posts accounted for most of the small volume of output from timberlands within the State. The percentage distribution of saw-log output by States was quite similar to that of all roundwood. Veneer logs were produced in only three States; Idaho and Montana accounted for 93 percent of the total output, the remainder came from Colorado. The pulpwood output came largely from Idaho (37 percent) and Arizona (27 percent). The only other States with significant volumes were western South Dakota and Montana.⁵ Idaho and Montana accounted for 28 percent of the output of all roundwood other than saw logs, veneer logs, and pulpwood.

**Number of active sawmills declines,
plywood plants increase**

There were 657 active sawmills in the Rocky Mountain States in 1966, as compared to 864 in 1962 — a decrease of 24 percent.

⁵ Western South Dakota output and part of the Idaho and Montana output were shipped to mills in the Lake States.

Table 2.—Output of roundwood products, by State, for selected years, 1952-1966

State	Year				
	1952	1954	1958	1962	1966
			Percent		
Idaho	43.5	43.3	41.1	38.4	39.1
Montana	25.9	23.9	26.3	31.9	29.4
Western South Dakota	1.7	¹ 1.5	¹ 3.3	1.7	2.0
Wyoming	2.8	2.9	3.2	3.2	4.1
Arizona	10.8	10.0	8.9	10.1	11.1
Colorado	7.3	6.1	6.7	5.6	6.3
Nevada	.1	.8	.9	.1	(²)
New Mexico	6.4	9.5	7.7	7.1	6.3
Utah	1.5	2.0	1.9	1.9	1.7
Total	100.0	100.0	100.0	100.0	100.0

¹ Computed from data for entire State; separate data for western South Dakota not available for 1954 and 1958.

² Less than 0.05 percent.

The following tabulation shows the 1966 distribution of mills by State.

State	Number of active mills
Idaho	168
Montana	148
Western South Dakota	21
Wyoming	65
Arizona	23
Colorado	116
Nevada	2
New Mexico	64
Utah	50
Total	657

Average lumber production per mill in 1966 was 6.4 MMBF as compared with 4.2 million in 1962. One important factor contributing to the higher average production per mill in 1966 was the substantial decrease in the number of smaller mills as shown in table 3.

In 1966, log imports to sawmills and veneer and plywood plants in the Mountain States were reported as 74 MMBF and came mainly from California and Washington. Considerable movement of logs across State boundaries occurred within the Mountain States, especially between Idaho and Montana.

In 1966 about 92,000 cords, or practically one-third of the round pulpwood harvested

Table 3.—Active sawmills and average annual production by production class

Production class (BF/yr.)	Year	Active	Average annual	Total
		sawmills	production ¹	lumber production
10 million and more	1962	Number	MMBF	Percent
	1966	112	25.1	77.7
1 to 10 million	1962	114	30.2	81.5
	1966	232	2.9	18.9
Less than 1 million	1962	167	3.9	15.4
	1966	520	.2	3.4
		376	.3	3.1

¹ 1962 and 1966 averages obtained by prorating the Bureau of the Census lumber production figures among mill classes on the basis of the Intermountain Station's surveys of saw-log receipts.

from timberlands in the Rocky Mountain States went to the Lake States. Also marketed in the Lake States were nearly 90,000 cords of chips. The latter volume constituted 6 percent of the volume of chips and sawdust produced as a pulpwood byproduct of sawmills in the Mountain States. The leading States in exports of round pulpwood to the Lake States were western South Dakota (54,000 cords) and Montana (37,000 cords). Of the round pulpwood exported to the Lake States, ponderosa pine comprised about one-half of the volume and lodgepole pine two-fifths.

Veneer and plywood plants increased from eight in 1962 to 12 in 1966. Distribution of plants for the 2 years was as follows:

<i>State</i>	<i>1962</i>	<i>1966</i>
Idaho	3	5
Montana	5	6
Colorado	0	1

There were four active pulpmills in the Mountain States in 1966, one in Idaho, one in Montana, and two in Arizona. Only three mills were active in 1962.

Utilization of roundwood improved — byproducts increased, residues decreased

Volume of plant byproducts in 1966 amounted to 201 MMCF or about one-fourth the volume of roundwood. Distribution of this volume by type of byproduct was as follows:

<i>Byproduct</i>	<i>MMCF</i>	<i>Percent</i>
Fiber¹	116	58
Industrial fuel	67	33
Domestic fuel	2	1
Others	16	8
Total	201	100

¹>Mainly chips and sawdust for pulpwood.

Nearly 90 percent of the total volume of plant byproducts came from sawmills; veneer and plywood plants were the principal source of the remainder.

Byproduct volume in 1966 was nearly three times the 1962 output of 68.7 MMCF. The latter represented only 11 percent of the roundwood volume for that year. Idaho and Montana made the greatest gains in volume between 1962 and 1966, although percentage-wise Nevada and Arizona were outstanding. The biggest increases in volume occurred in States with pulpmills and papermills — Idaho, Montana, and Arizona.

Volume of plant residues is affected not only by the total volume of roundwood received at mills, but also by the proportion of roundwood volume utilized for byproducts. Therefore, it is not surprising that in light of the big increase in byproduct volume in 1966 as compared with 1962, plant residues decreased 38 MMCF or 19 percent. This overall decrease occurred despite the fact that reductions occurred in only four States:

<i>State</i>	<i>Reduction in residue volume 1962 to 1966</i>	
	<i>(MMCF)</i>	<i>(Percent)</i>
Montana	24,614	39
Idaho	23,947	30
Western South Dakota	523	19
New Mexico	1,930	11

Increases occurred in all other States and amounted to 13 MMCF. The biggest increases were in Nevada (627 percent) and Wyoming (39 percent).

The 1966 volume of plant residues amounted to 20 percent of roundwood volume — a decrease from the 31 percent in 1962.

The lumber industry was by far the major producer of residues; only about 3 percent of the total volume came from other industries.

Nearly three-fifths of the residues volume was fine material (sawdust and shavings). The remainder was slabs, edgings, and similar coarse material.

Roundwood products were mainly from growing stock inventory

In 1966, 759 MMCF or 94 percent of the total volume of roundwood products came

Table 4. — Removals from growing stock, by State, 1966

State	Total removals	All products	Logging residues	Other removals
----- Thousand cubic feet -----				
Idaho	338,508	301,930	36,034	544
Montana	270,555	233,369	36,860	326
Western South Dakota	15,775	14,923	767	85
Wyoming	35,980	32,596	2,715	669
Arizona	81,198	71,032	7,509	2,657
Colorado	56,404	49,432	4,346	2,626
Nevada	76	76	(¹)	(¹)
New Mexico	49,320	42,849	5,122	1,349
Utah	15,484	13,146	1,486	852
Total	863,300	759,353	94,839	9,108

¹ Less than 0.5 MCF.

from the growing stock inventory on commercial forest land. The remaining 6 percent came from cull and dead trees on commercial forest land and from harvesting trees on other lands.

The net volume of growing stock trees removed from inventory in 1966 was 863 MMCF of which 88 percent went into roundwood products. Logging residues (the unused portions of trees cut or killed by logging) accounted for 95 MMCF (11 percent). An operation that had a large amount of logging residue is shown in figure 5. Other removals (the net volume of growing stock trees removed from inventory by cultural operations such as timber-stand improvements, land clearing, and

changes in land use) accounted for the remaining 9 MMCF or 1 percent of total removals. Removals from growing stock by type of removals and by State for 1966 are shown in table 4.

Total sawtimber removals from commercial forest land were 5 billion board feet, of which 93 percent went into roundwood products. Logging residues accounted for 6 percent and other removals, 1 percent.

Tables 25 through 34, in Appendix B, present additional statistics concerning timber products of the Rocky Mountain States.



Figure 5.—An operation in north Idaho illustrating a large amount of logging residue. Such residues accounted for 11 percent of the 863 MMCF of growing stock removals in the Rocky Mountain States in 1966. Nearly all the remaining volume of timber removals went into roundwood products, with ponderosa pine and Douglas-fir the two leading species harvested.

IDAHO

Idaho led all other Mountain States with 316 MMCF of roundwood product output in 1966 or 39 percent of the total for the Mountain States. The 1966 output for Idaho represents a 27 percent increase since 1962, and 61 percent since 1952, but about a 4 percent decrease from 1956 (figure 6).

Saw logs accounted for four-fifths of roundwood output; veneer log and pulpwood output was up sharply

The volume of saw-log output in 1966 was 260 MMCF (1,665 MMBF), which represents a 10 percent increase since 1962. The saw-log output was 82 percent of the total roundwood volume in 1966 — about 12 percent less than in 1962. Veneer-log production of 39 MMCF represented about 12 percent of the

total roundwood product output and was about 14 times the amount in 1962. Pulpwood output was 9 MMCF, nearly double the 1962 volume, and accounted for 3 percent of all roundwood products in 1966. With several new chipmills using round pulpwood already operating or under construction, pulpwood production will undoubtedly continue upward. The 1966 output of all other products combined was 8 MMCF, up about 26 percent from 1962; this volume accounted for nearly 3 percent of all roundwood products.

Saw-log production continued to parallel total roundwood output with respect to percent of increases since 1952. The total output of all other products made a sharp relative increase between 1962 and 1966. Compari-

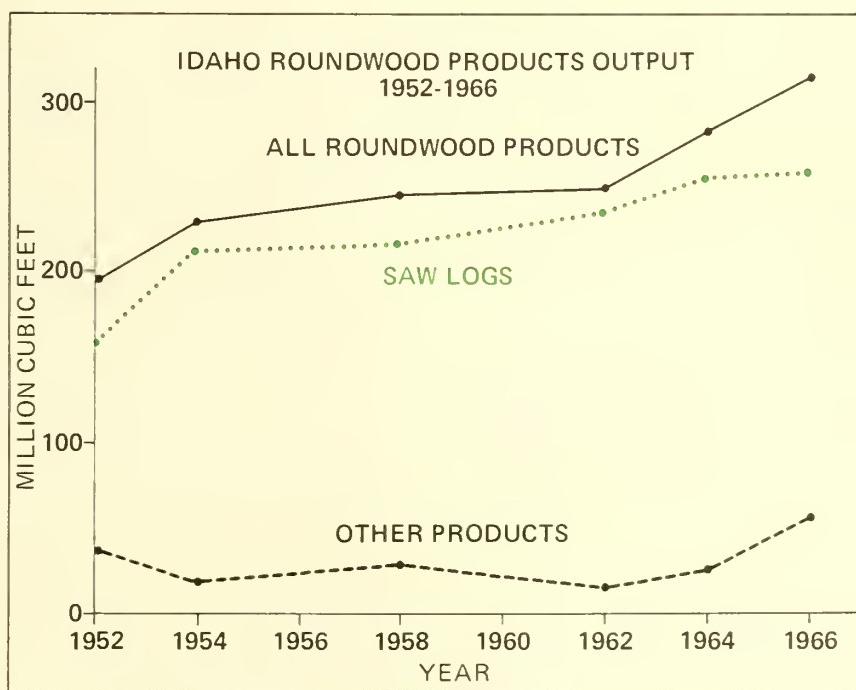


Figure 6

Table 5.—Roundwood products output, 1962 and 1966, and percent change

Product	Unit of measure	1962	1966	Percent change
Saw logs	Thousand board feet	1,547,334	1,665,425	8
Veneer logs	Thousand board feet	19,030	258,129	1,256
Pulpwood	Thousand standard cords	66	107	62
Commercial poles	Thousand pieces	150	192	28
Posts	Thousand pieces	818	699	-15
Mine timbers	Thousand cubic feet	223	142	-36
Miscellaneous industrial wood ¹	Thousand cubic feet	124	751	506
Miscellaneous farm timbers	Thousand cubic feet	2,302	1,525	-34
Fuelwood	Thousand standard cords	5	15	200
All products	Thousand cubic feet	249,231	316,188	27

¹Includes products such as house logs, shingle bolts, and similar items.

sons for saw logs and various other products are shown in table 5.

Fifty-five percent of Idaho's 1966 saw-log output came from three counties. Clearwater County contributed 30 percent (494 MMBF) of the total. Shoshone and Idaho Counties provided 13 percent (222 MMBF) and 12 percent (206 MMBF) respectively. Clearwater and Shoshone Counties' output increased substantially since 1962 while Idaho County's was down slightly. Over half of Idaho's veneer-log output of 258 MMBF came from Clearwater County; Idaho County accounted for 24 percent (63 MMBF). The pulpwood volume of 106,652 standard cords came primarily from Clearwater County (42 percent) and Bonner County (34 percent).

One hundred and fifteen MMBF of saw logs were exported from Idaho in 1966, with 95 percent of the volume going to Montana. The remainder went to Washington and Wyoming.

Sixty percent of all product volume came from Douglas-fir, true firs, and western white pine

Douglas-fir, true firs, and western white pine led all species in total roundwood production as well as in both saw-log and veneer-

log output. Ponderosa pine and western red-cedar were other species used for a number of products (figure 7). Lodgepole pine was used mainly for saw logs, pulpwood, posts, fuelwood, and miscellaneous farm timbers. Western hemlock was a significant pulpwood species.

The output of all major species went up from 1962, especially lodgepole pine (182 percent), western white pine (67 percent), and western larch (44 percent). Douglas-fir was up 16 percent, true firs 15 percent, and ponderosa pine 5 percent.

National Forests supplied more than one-half of roundwood

National Forests were the source of 171 MMCF or 54 percent of the roundwood products in 1966. Forest industry lands provided a harvest of 72 MMCF, or 23 percent. The remainder of the output came from the other public and other private classes in about equal proportions.

Output of all four classes of ownership was higher in 1966 than in 1962. The largest increase was in the National Forest contribution, which rose 42 percent. This compares with a 13 percent increase for forest industry lands, 14 percent for other private lands, and 11 percent for other public lands.



Figure 7

Fewer sawmills produce more lumber

In 1966, there were 168 active sawmills in Idaho as compared to 193 in 1962, continuing the trend towards fewer mills. Average lumber production per mill was up 20 percent to 9.5 MMBF, which is almost half again as high as the average production for all Mountain States mills (6.4 MMBF). Table 6 presents production and number of sawmills for selected years.

As shown in table 6, there was a small increase in the number of large and small mills and a decrease of 35 mills in the medium size class between 1962 and 1966.

Imports of logs to sawmills and plywood plants in Idaho in 1966 were reported as 40 MMBF from Montana, 29 million from Washington, and 123,000 from Wyoming. About 94 percent of this volume was in saw logs, the remainder, veneer logs.

Plant byproducts are of increasing significance; residue volume is less

The volume of plant byproducts totaled 92 MMCF in 1966 which represents 46 percent of the entire Mountain States output. Industrial sources of these materials and types of byproducts are shown in table 7.

Byproduct volume in 1966 was more than double the 38.9 MMCF output of 1962. Idaho thus made the greatest gain in volume of any of the Mountain States between 1962 and 1966. Other States showed greater percentage increases.

As would be expected, the significant increase in byproduct volume was accompanied by a very substantial decrease in plant residues, 24 MMCF, between 1962 and 1966. The 1966 volume of plant residues amounted

Table 6.—Active sawmills and average annual production by production class

Production class (BF/yr.)	Year	Active	Average annual	Total
		sawmills	production ¹	lumber production
10 million and more	1956	37	31.5	73
	1962	42	28.2	78
	1966	45	31.3	88
1 to 10 million	1956	108	3.8	25
	1962	81	3.8	20
	1966	46	3.8	11
Less than 1 million	1956	166	.2	2
	1962	70	.4	2
	1966	77	.2	1

¹ 1956 averages derived from a cooperative lumber survey by the Bureau of the Census and the Intermountain Station; 1962 and 1966 averages obtained by prorating the Bureau of the Census lumber production figures among mill classes on the basis of the Intermountain Station's surveys of saw-log receipts.

to 18 percent of roundwood, considerably less than the 32 percent of 1962.

Nearly all the plant residues were produced by the lumber industry. About three-fifths of the volume was fine material (sawdust and shavings) and two-fifths coarse material such as slabs and edgings. Between 1962 and 1966, coarse residues showed a reduction of nearly one-half in volume and fine residues of somewhat less than one-fourth.

Growing stock provided nearly all roundwood products

In Idaho, 95 percent (302 MMCF) of the total volume of roundwood products harvested came from the growing stock inventory on commercial forest land. Cull and dead trees on commercial forest land and harvesting of trees

on other lands provided the remaining volume of roundwood products.

Eighty-nine percent of the total removals from growing stock went into roundwood products. Logging residues (36 MMCF) accounted for nearly all of the remaining volume. Timber-stand improvement operations, land clearing, and changes in land use contributed a very small volume.

Total sawtimber removals from commercial forest land were 1,974 MMBF with 94 percent (1,859 MMBF) going into products. Logging residues accounted for 112 MMBF, nearly all of the remaining volume.

Tables 35 through 39, in Appendix B, present additional statistics concerning timber products of Idaho.

Table 7.—Volume of plant byproducts by industrial source and use class, 1966

Industrial source	All byproducts	Fiber ¹	Industrial fuel	Domestic fuel	Other byproducts ²
<i>Million cubic feet</i>					
Lumber industry	79.0	42.3	28.4	0.5	7.8
Veneer and plywood industry	13.2	11.0	.1	(³)	2.1

¹ Mainly chips and sawdust for pulpwood.

² Includes livestock bedding, mulch, and small dimension and specialty items.

³ Less than 0.05 MMCF.

MONTANA

Output of roundwood products from Montana timberlands in 1966 amounted to 238 MMCF or 30 percent of the total from lands within the Mountain States. Production showed an increase of 15 percent over 1962 and was slightly more than double the volume for 1952. In comparison, production for the Mountain States increased 25 percent over the 1962-66 period and 79 percent between 1952 and 1966.

Saw logs accounted for more than four-fifths of roundwood output

The 1966 saw-log volume of 196 MMCF (1,254 MMBF) constituted 82 percent of the

total volume of roundwood products. Veneer logs were second in volume (28 MMCF) and contributed nearly 12 percent of the roundwood output. The remaining 6 percent consisted of volume in pulpwood, poles, posts, mine timbers, fuelwood, and other roundwood for a variety of uses.

Saw-log production continued roughly to parallel total roundwood output with respect to percent of increases since 1952 (figure 8). However, the total output of all other products made a sharp relative increase between 1962 and 1966. Comparisons for these other roundwood products, as well as for saw logs, are shown in table 8.

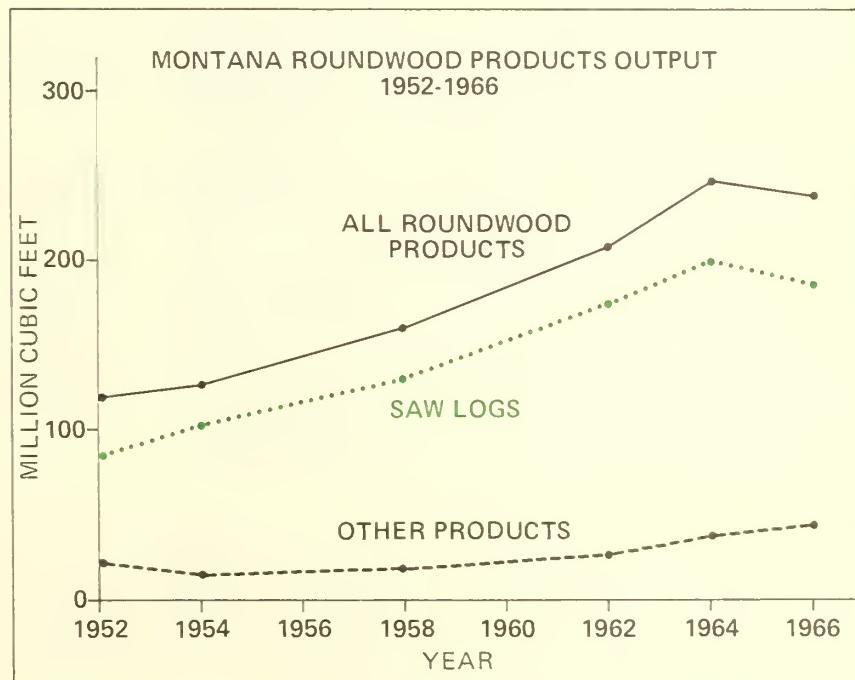


Figure 8

Table 8.—Roundwood products output, 1962 and 1966, and percent change

Product	Unit of measure	1962	1966	Percent change
Saw logs	Thousand board feet	1,275,688	1,253,868	-2
Veneer logs	Thousand board feet	110,654	183,449	66
Pulpwood	Thousand standard cords	47	44	-6
Commercial poles ¹	Thousand pieces	122	133	9
Posts	Thousand pieces	1,047	1,569	50
Mine timbers	Thousand cubic feet	271	2,974	997
Miscellaneous industrial wood ²	Thousand cubic feet	281	256	-9
Miscellaneous farm timbers	Thousand cubic feet	2,108	3,027	44
Fuelwood	Thousand standard cords	4	8	100
All products	Thousand cubic feet	207,289	238,231	15

¹Includes a small amount of piling.

²Includes products such as house logs, converter poles, and similar items.

Relatively few counties provided the major portion of the timber products output. Of the 1,254 MMBF of saw logs removed from Montana timberlands, nearly 25 percent came from Lincoln County; Flathead with 13 percent and Sanders and Missoula with 12 percent each were the other leading counties. Veneer-log output from timberlands within the State (183 MMBF) came largely from three counties—Flathead 34 percent, Missoula 30 percent, and Lincoln 19 percent. The pulpwood volume of 43,645 cords came from two counties: Gallatin County produced 85 percent and Lincoln County 15 percent (figure 9).

Although products harvested from Montana timberlands were largely used by industries within the State, there were some significant exports. The round pulpwood was exported—85 percent to the Lake States, the remainder to Washington State. Other exports consisted of about 42 MMBF of saw logs and veneer logs to Idaho and Wyoming, and a small number of commercial poles to the Lake States.

Douglas-fir led in product volume

Douglas-fir, with 81 MMCF harvested for roundwood products, was by far the leading species in 1966. The other important species contributing to total roundwood output were

western larch (46 million), ponderosa pine (36 million), and lodgepole pine (32 million). However, as shown by figure 10, species varied substantially in importance by individual products.

The output of most major species went up from 1962 along with the general increase in roundwood volume. The biggest increase (62 percent) was for lodgepole pine. Douglas-fir output was up 17 percent and ponderosa pine was up 23 percent. Western larch declined about 7 percent in product volume.

National Forests supplied nearly three-fifths of roundwood

Montana's National Forests were the source of 141 MMCF, or 59 percent of the roundwood products in 1966. Forest industry lands provided a harvest of 39 MMCF or 17 percent. Other private owners furnished 15 percent of the product volume, and lands classed as other public, 9 percent.

Output from National Forest lands in 1966 increased 22 percent over 1962, and output from other public holdings increased by 109 percent. The 1966 volume from other private lands remained about the same as 1962, while output from forest industry lands declined 11 percent.



Figure 9.—Loading pulpwood near Bozeman, Montana, for shipment to mills in the Lake States.

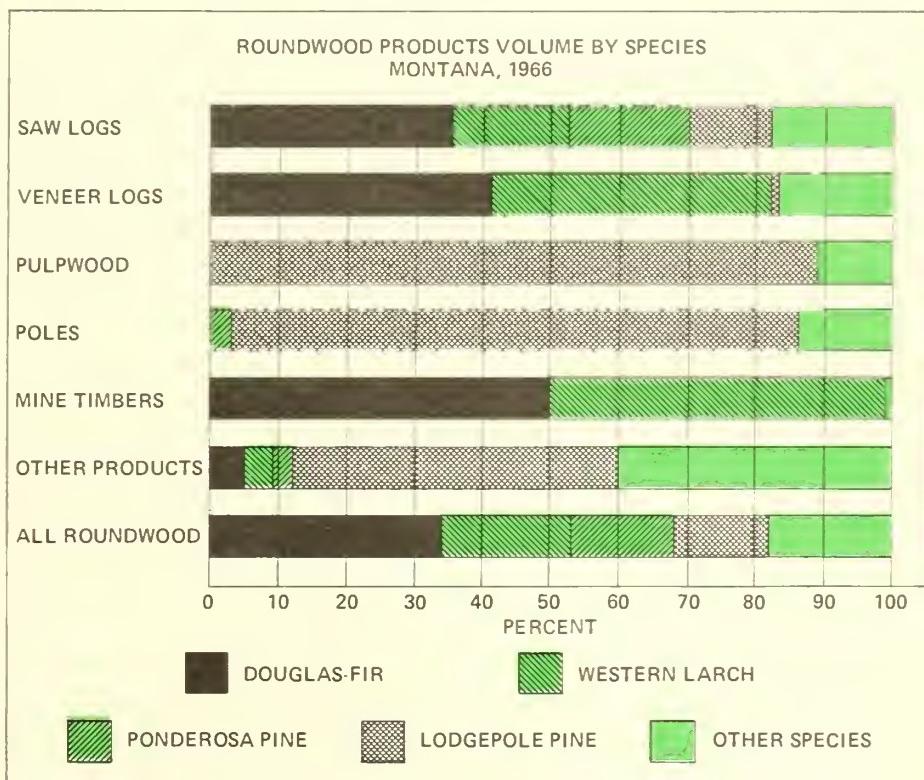


Figure 10

Table 9.—Active sawmills and average annual production by production class

Production class (BF/yr.)	Year	Active sawmills	Average annual production ¹	Total lumber production
			Number	Percent
10 million and more	1956	26	25.1	67
	1962	40	23.4	87
	1966	37	33.5	90
1 to 10 million	1956	78	3.4	27
	1962	40	2.7	11
	1966	25	3.3	6
Less than 1 million	1956	229	.3	6
	1962	129	.2	2
	1966	86	.6	4

¹ 1956 averages derived from a cooperative lumber survey by the Bureau of the Census and the Intermountain Station; 1962 and 1966 averages obtained by prorating the Bureau of the Census' lumber production figures among mill classes on the basis of the Intermountain Station's surveys of saw-log receipts.

Sawmills were fewer but average production increased

The trend over recent years toward fewer mills but greater average production per mill continued in 1966. Average production of the 148 mills active in 1966 was 9.3 MMBF. In comparison, average production of the 209 mills in 1962 was 5 MMBF, and of the 333 mills in 1956, 3 million. Table 9 presents this information for sawmills in selected size-class groupings.

As indicated in table 9, between 1962 and

1966 the number of mills declined in all size classes. Most of the decrease in number, especially in the small size class, resulted from mills becoming inactive or going out of business.

Log receipts at Montana mills include logs imported from other States as well as those received from Montana timberlands. Imports of logs to sawmills and plywood plants in Montana in 1966 are reported as 109 MMBF from Idaho, and 67,000 from Wyoming; about 97 percent of this volume was in saw logs, the remainder veneer logs.

Table 10.—Volume of plant byproducts by industrial source and use class, 1966

Industrial source	All byproducts	Fiber ¹	Industrial fuel	Domestic fuel	Other byproducts ²
	Million cubic feet				
Lumber industry	64.7	34.0	26.4	0.7	3.6
Veneer and plywood industry	8.8	8.2	.2	.3	.1
Total	73.5	42.2	26.6	1.0	3.7

¹ Mainly chips and sawdust for pulpwood.

² Includes livestock bedding, mulch, and small dimension and specialty items.

Plant byproducts were up sharply since 1962; residues down

The 1966 volume of plant byproducts amounted to 73.5 MMCF. The industrial sources of these materials and types of by-products are shown in table 10.

The 1966 volume of plant byproducts represents three times the volume produced in 1962. This increased utilization partially explains the reduction in unused plant residues from 63 MMCF in 1962 to 38 million in 1966. The greatest decrease in residue volume was in the lumber industry — from 57 MMCF in 1962 to 37 million in 1966, or 35 percent less. However, the plywood industry showed the greatest percentage decrease — 87 percent. Other industries did not change significantly in residue volume.

Of the 1966 residue volume of 38 MMCF, about two-thirds was fine material (sawdust and shavings), and the remainder was coarse material (slabs, edgings, veneer cores, and trimmings). Between 1962 and 1966 coarse residues showed a reduction of about one-half in volume, and fine residues somewhat less than one-third.

Nearly all roundwood products came from growing stock inventory

Of the total volume of roundwood products harvested in Montana in 1966, 98 percent, or 233 MMCF, came from the growing stock inventory on commercial forest land. Cull and dead trees on commercial forest land and harvesting of trees on other lands provided the remaining 2 percent.

Eighty-six percent of the total removals from growing stock went into roundwood products; nearly all of the remainder was in the form of logging residues (37 MMCF), although a very small volume resulted from timber-stand improvement operations, land clearing, and changes in land use.

Total sawtimber removals from commercial forest land were 1,571 MMBF with more than 92 percent (1,452 MMBF) going into products. Logging residues accounted for 117 MMBF, nearly all of the remaining volume.

Tables 40 through 44, in Appendix B, present additional statistics concerning timber products of Montana.

WESTERN SOUTH DAKOTA

Output of roundwood products from western South Dakota timberlands in 1966 amounted to nearly 16 MMCF or about 2 percent of the total from lands within the Mountain States. Production increased 41 percent over 1962 and more than doubled the 1952 output (figure 11). In comparison, production for the Mountain States increased 25 percent over the 1962-66 period and 79 percent between 1952 and 1966.

Saw logs were still predominant but pulpwood output was moving up

The 1966 saw-log volume of 6.9 MMCF (44 MMBF) constituted 44 percent of the total volume of roundwood products. Pulp-

wood was second in volume (4.7 MMCF) and contributed 29 percent of the roundwood output. The remaining 27 percent consisted of posts, fuelwood, poles, mine timbers, and miscellaneous farm timbers.

As indicated by figure 11, saw-log output as a percentage of total product volume has followed a generally declining trend since 1952. Between 1954 and 1958 the combined volume of other products began increasing more rapidly than saw-log volume. Pulpwood became a significant product between 1958 and 1962 and subsequently made further gains. Total output of all products in 1966 was up 5 MMCF, or 41 percent over 1962; comparisons for major products are shown in table 11.

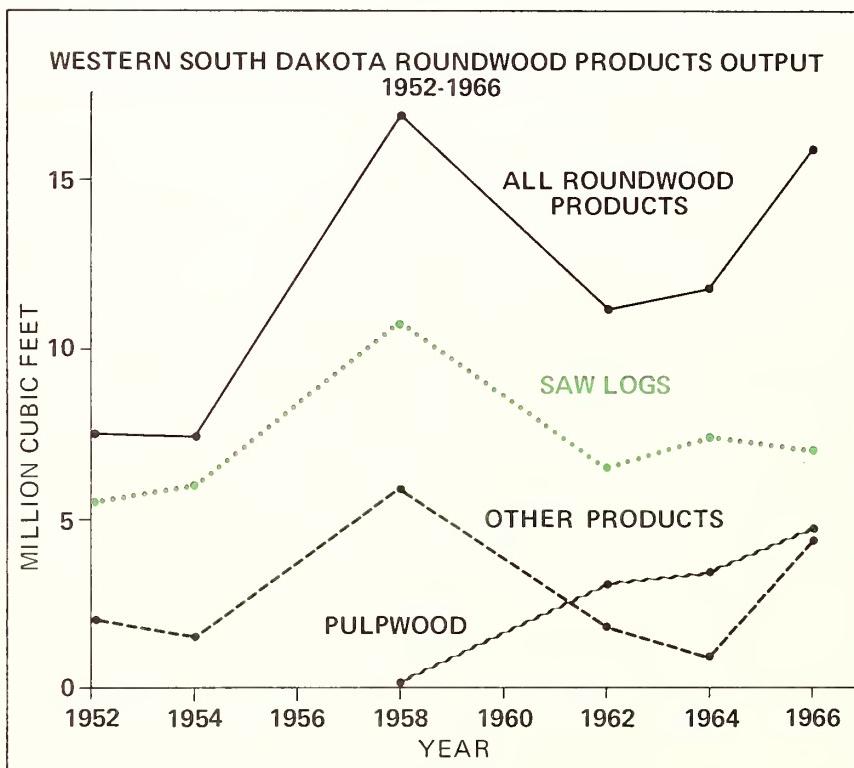


Figure 11

Table 11.—Roundwood products output, 1962 and 1966, and percent change

Product	Unit of measure	1962	1966	Percent change
Saw logs	Thousand board feet	38,958	44,308	14
Pulpwood	Thousand standard cords	34	54	59
Mine timbers	Thousand cubic feet	0	1	100
Posts, fuelwood, miscellaneous farm timbers ¹	Thousand cubic feet	1,682	4,301	156
All products	Thousand cubic feet	11,235	15,859	41

¹ Includes volume of commercial poles.

Distribution of the saw-log output among the four counties or portions of counties from which harvested was as follows:

County	Percent
Custer	33.9
Lawrence	20.8
Meade	11.9
Pennington	33.4
	100.0

About 97 percent of the product volume was ponderosa pine. The remainder was white spruce and practically all of this went into pulpwood.

Not all products harvested from western South Dakota timberlands were processed by industries within the State. About 10 MMBF, or 23 percent of the saw-log output, went to mills in Wyoming. And the entire pulpwood output, both roundwood and chips, went to mills in the Lake States.

Public lands provided nine-tenths of roundwood volume

In 1966 as in 1962 public lands — particularly National Forests — provided the preponderance of the 15.9 MMCF of product volume:

Land ownership class	1962	1966
	(Percent)	
National Forest	83.9	83.4
Other public	.5	6.6
Forest industry	3.2	6.6
Other private	12.4	3.4
	100.0	100.0

Most of the 1966 harvest for the "other public" class came from State lands although Bureau of Land Management lands provided some volume.

The National Forest percentage of total product volume changed very little between 1962 and 1966, but there has been a substantial increase over the last 30 years. Data for 1935 (Ware 1936) indicate National Forest lands provided a little less than 60 percent of the harvest volume in western South Dakota.

Sawmill numbers decreased since 1962 but average production increased

Twenty-one sawmills were active in western South Dakota in 1966 and had an average cut of 2.7 MMBF per mill. In comparison, 28 mills were active in 1962 and had an average cut per mill of 1.7 MMBF. As a further comparison, average production of all mills in the Mountain States in 1966 was 6.4 MMBF.

Table 12.—Active sawmills and average annual production by production class

Production class (BF/yr.)	Year	Active	Average annual	Total
		sawmills Number	production ¹ MMBF	lumber production Percent
10 million and more	1962	(²)	(²)	(²)
	1966	2	18.8	67
1 to 10 million	1962	7	6.0	87
	1966	5	2.7	24
Less than 1 million	1962	21	.3	13
	1966	14	.4	9

¹Averages derived by prorating the Bureau of Census' lumber production figures among mill classes on the basis of the Intermountain Station's survey of saw-log receipts.

²To avoid the possibility of disclosing individual operations in 1962, data for the few mills in this class were included in the 1 to 10 million class.

Table 12 provides a comparison between 1962 and 1966 of South Dakota mills by size-class groups.

It is apparent from the above that the total reduction of 7 mills by 1966 occurred in the small size class. This reduction, together with substantially increased production of mills in the large and medium classes accounted for the increased average output per mill.

Sawmill log receipts include logs imported from outside the State as well as those received from western South Dakota timberlands. In 1966, imports of saw logs were reported as 10 MMBF from Wyoming. These imports just about balance the volume of saw-log exports mentioned earlier.

Volume of plant byproducts increased sharply since 1962; residues decreased slightly

The 1966 volume of plant byproducts amounted to 1.5 MMCF — practically all of it from the lumber industry. Distribution of this volume by type of byproduct was as follows:

Byproduct	MCF ¹
Pulp chips	811
Industrial fuel	558
Domestic fuel	48
Other ¹	116
Total	1,533

¹Includes such byproducts as livestock bedding, mulch, and small dimension and specialty items.

The 1966 volume of plant byproducts represents more than two and one-half times the volume produced in 1962.

The volume of unused plant residues in 1966 amounted to 2.2 MMCF — down slightly from the 2.7 million in 1962. Two-thirds of the 1966 residues were fine material (sawdust and shavings); the remainder were slabs, edgings, trimmings, and similar coarse material.

Nearly all roundwood volume came from growing stock inventory

Of the total volume of roundwood products harvested in western South Dakota in 1966, 94 percent, or 14.9 MMCF, came from the growing stock inventory on commercial forest land. Cull and dead trees on commercial forest land and timber harvested on other lands provided the remaining 6 percent. Ninety-five percent of the total removals from growing stock went into roundwood products; the bulk of the remainder was in the form of logging residues, although there was some volume resulting from timber-stand improvement operations, land clearing, and changes in land use.

Total sawtimber removals from commercial forest land were 95 MMBF with 97 percent going into products. Logging residues accounted for nearly all of the remaining volume.

Tables 45 through 47, in Appendix B, present additional statistics concerning timber products of western South Dakota.

WYOMING

Output of roundwood products from Wyoming timberlands in 1966 amounted to 33.5 MMCF or 4 percent of the total output from lands within the Mountain States. Production showed an increase of 61 percent over 1962 and was more than two and one-half times the volume in 1952 (figure 12). In comparison, production for the Mountain States increased 25 percent over the 1962-66 period and 79 percent between 1952 and 1966.

Saw logs were about four-fifths of roundwood output

The 1966 saw-log volume of 27.1 MMCF (173.5 MMBF) constituted 81 percent of the

total volume of roundwood products. Commercial poles were second in volume (3.6 MMCF) and constituted 11 percent of the roundwood output. The remaining 8 percent consisted of farm and mine timbers, posts, pulpwood, fuelwood, and miscellaneous industrial wood.

Sawmilling continues as the dominant timber industry. Since 1952, saw logs consistently have accounted for more than four-fifths of the annual output and in 1962 reached a high of 94 percent. However, as shown in table 13, several of the other products made sharp increases within the last 4 years.

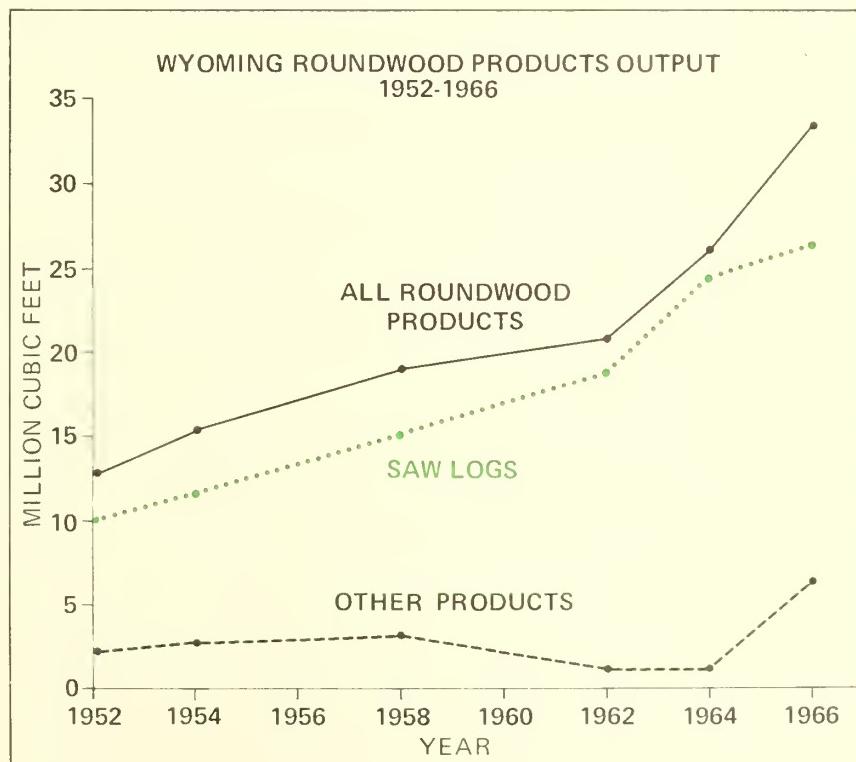


Figure 12

Table 13.—Roundwood products output, 1962 and 1966, and percent change

Product	Unit of measure	1962	1966	Percent change
Saw logs	Thousand board feet	116,523	173,491	49
Pulpwood	Thousand standard cords	4	2	-50
Posts	Thousand pieces	79	292	270
Mine timbers	Thousand cubic feet	54	478	785
Miscellaneous industrial wood ¹	Thousand cubic feet	448	5,412	1,108
Fuelwood	Thousand standard cords	1	2	100
All products	Thousand cubic feet	20,771	33,523	61

¹Includes products such as house logs, commercial poles, piling, miscellaneous farm timbers, and similar items.

The leading counties and the percentage they contributed to sawmill log receipts from Wyoming timberlands were as follows:

County	Percent
Carbon	17.2
Fremont	15.7
Lincoln	13.7
Crook	13.5
Teton	12.9
All other counties	<u>27.0</u>
	100.0

Approximately 85 percent of the roundwood products harvested from Wyoming timberlands were processed by industries within the State. About 18 MMBF of saw logs were exported—mainly to western South Dakota and Colorado, although some exports went to Idaho and Montana. The small volume of round pulpwood went to mills in the Lake States, as did the entire volume of pulp chips (2.9 MMCF).

Output was predominantly lodgepole pine and came from National Forest lands

Lodgepole pine with a harvest volume of 20 MMCF, or 59 percent of the State total, continued its traditional leadership among species. The other principal species contributing to total roundwood output were ponderosa pine (21 percent), spruce (15 percent), and

Douglas-fir (3 percent). However, as shown in figure 13, species varied considerably in importance for individual products.

Consumption of all major species went up from 1962 along with the general increase in roundwood volume. The largest increase (87 percent) was for ponderosa pine. Spruce was up 63 percent and lodgepole pine 58 percent.

National Forests provided 93 percent of the roundwood harvest. This is slightly higher than the 1962 percentage; the percent from other ownership classes dropped correspondingly.

Sawmill numbers declined but average production increased

The trend over recent years toward fewer mills but greater average production per mill continued in 1966. Average production of the 65 mills active in 1966 was 1.9 MMBF. In comparison, average production of the 76 mills in 1962 was 1.4 million feet, and of the 107 mills in 1957, 1.0 million. As a further comparison, average production of all mills in the Mountain States in 1966 was 6.4 MMBF. Table 14 permits comparisons for 1957, 1962, and 1966 of Wyoming mills by selected size-class groupings.

Log receipts at Wyoming mills include logs imported from other States as well as those received from Wyoming timberlands. In 1966,

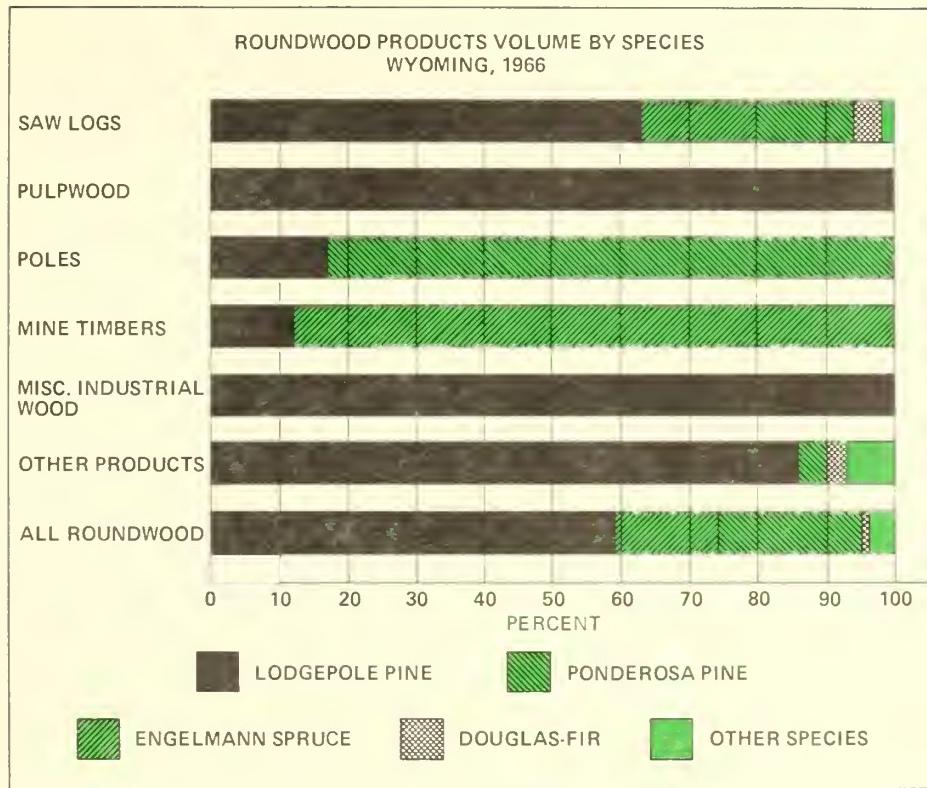


Figure 13

Table 14. — Active sawmills and average annual production by production class

Production class (BF/yr.)	Year	Active sawmills	Average annual production ¹	Total lumber production
		Number	MMBF	Percent
10 million and more	1957	(2)	(2)	(2)
	1962			
1 to 10 million	1966	4	14.7	47
	1957	22	4.0	80
	1962	19	4.7	88
Less than 1 million	1966	19	3.2	48
	1957	85	.3	20
	1962	57	.2	12
	1966	42	.1	5

¹ 1957 averages derived from a cooperative lumber survey by the Bureau of the Census and the Intermountain Station; 1962 and 1966 averages obtained by prorating the Bureau of the Census' lumber production figures among mill classes on the basis of the Intermountain Station's surveys of saw-log receipts.

² To avoid the possibility of disclosing individual operations in 1957 and 1962, data for the few mills in this class were included in the 1 to 10 million class.

imports of logs to sawmills in the State amounted to 16.2 MMBF. Of this volume, 10.2 million came from western South Dakota, the remainder from Idaho, Utah, and Montana. The volume of saw-log imports was somewhat less than the 18 MMBF indicated earlier as exported.

Both plant byproduct and residue volumes increased since 1962

The 1966 volume of plant byproducts amounted to 3.3 MMCF — practically all of it from the lumber industry. Distribution of this volume by type of byproduct was as follows:

Byproducts	MCF
Pulp chips	2,928
Industrial fuel	165
Domestic fuel	137
Other ¹	83
Total	3,313

¹Includes such byproducts as livestock bedding, mulch, and small dimension and specialty items.

The 1966 volume of plant byproducts represents a little more than three times the volume produced in 1962. Despite this increased production of byproducts, the volume of residues increased from 8.6 MMCF in 1962 to 11.9 million in 1966 — about a 39 percent increase. This contrasts with a 19 percent reduc-

tion for the Mountain States area. Ninety percent of the residues came from the lumber industry and about one-half the volume was fine material (sawdust and shavings), and one-half slabs, edgings, trimmings, and similar coarse material.

Product volume was largely from growing stock inventory

Of the total volume of roundwood products harvested in Wyoming in 1966, 97 percent, or 32.6 MMCF, came from the growing stock inventory on commercial forest land. Cull and dead trees on commercial forest land and timber harvested from other lands accounted for the remaining 3 percent.

Ninety-one percent of the total removals from growing stock went into roundwood products. Nearly all of the remainder was in the form of logging residues (2.7 MMCF), although a small volume resulted from timber-stand improvement operations, land clearing, and changes in land use.

Total sawtimber removals from commercial forest land were 207 MMBF with 95 percent (196 MMBF) going into products. Logging residues accounted for 7 MMBF and other removals 4 million.

Tables 48 through 50, in Appendix B, present additional statistics concerning timber products of Wyoming.

ARIZONA

Timber products volume in 1966 amounted to nearly 90 MMCF, or 11 percent of the Mountain States total output — sufficient to make Arizona the third ranking State. Production was 37 percent above that of 1962 and was nearly twice (or 1.8 times) that of 1952 (figure 14). For both comparisons (1966 with 1962 and with 1952), Arizona's increase in output was well above the average increase for the Mountain States.

Saw logs were still the predominant product, but relative importance is declining

Saw-log output in 1966 (62 MMCF or 400 MMBF) was 69 percent of the volume of all

roundwood products. This proportion is practically the same as it was in 1952 (68 percent). Saw-log output in Arizona, as a percentage of all roundwood products volume, apparently reached a peak in or about 1958 (86 percent) and has since been declining, although volumewise there has been an increase averaging 6.3 percent annually since 1952. However, since saw logs are still the predominant product, the output trends for saw logs and all products are, in general, similar.

Comparisons for all classes of roundwood products between 1962 and 1966 show some rather large percentage changes for products

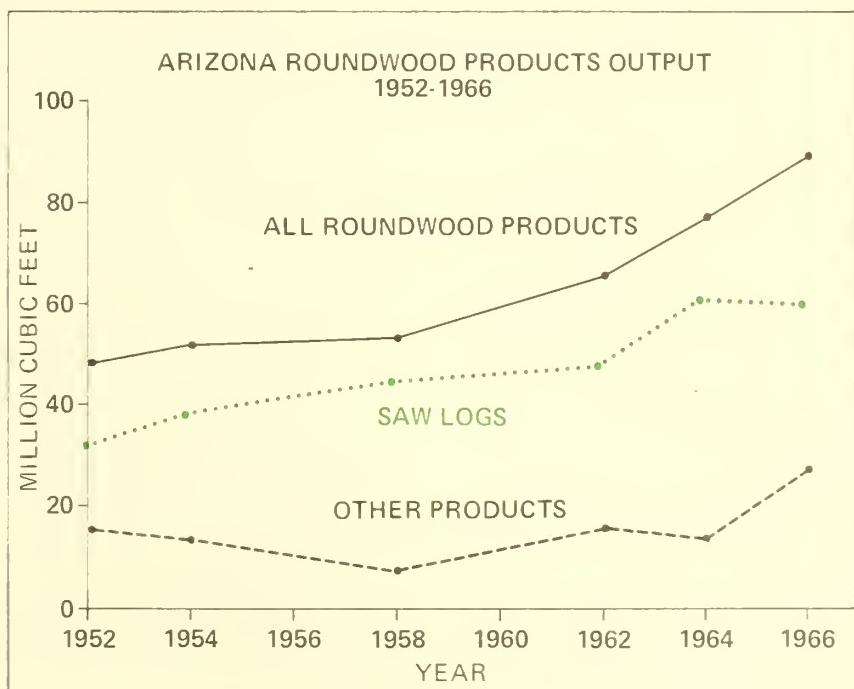


Figure 14

Table 15.—Roundwood products output, 1962 and 1966, and percent change

Product	Unit of measure	1962	1966	Percent change
Saw logs	Thousand board feet	341,757	400,236	17
Pulpwood	Thousand standard cords	88	77	-12
Commercial poles	Thousand pieces	9	18	100
Posts	Thousand pieces	173	398	130
Mine timbers	Thousand cubic feet	556	22	-96
Miscellaneous industrial wood ¹	Thousand cubic feet	389	86	-78
Miscellaneous farm timbers	Thousand cubic feet	97	556	473
Fuelwood	Thousand standard cords	97	226	133
All products	Thousand cubic feet	65,529	89,873	37
All products (except fuelwood)	Thousand cubic feet	57,187	70,437	23
All products (except saw logs and fuelwood)	Thousand cubic feet	7,632	8,000	5

¹Includes products such as house logs, converter poles, excelsior bolts, and similar items.

other than saw logs and round pulpwood, as shown in table 15.

However, while the net change for all roundwood products was a gain of 37 percent, the change for industrial wood (all products except fuelwood) was 23 percent. This difference reflects the influence of the large increase in fuelwood cutting from 1962 to 1966.

Arizona had no reported log imports from other States in 1966, but about 4.6 MMBF of logs cut in Arizona were exported to New Mexico sawmills.

Nine of Arizona's 14 counties produced saw logs in 1966, but of these, three counties were predominant. Coconino County was the source of 41 percent of all saw logs and Apache County provided 35 percent. These two counties, along with Navajo County, accounted for 89 percent of all saw logs produced in the State.

Nearly 70 percent of output came from ponderosa pine

Although ponderosa pine is still by far the dominant species, its relative importance has changed during the period from 1962 to 1966. In 1962, this species constituted 81 percent (53,278 MCF) of Arizona's output, but in 1966 it furnished 69 percent (62,372 MCF) of all roundwood products. A noteworthy change occurred in the utilization of such species as pinyon pine, juniper, and aspen (figure 15); these species comprised 18 percent of the output in 1966 as compared to 8 percent in 1962. All other species (Douglas-fir, Engelmann spruce, and the true firs) provided essentially the same percentages in 1966 as in 1962.

Three-fourths of output came from National Forests

By providing 75 percent (67 MMCF) of Arizona's roundwood products, the National



Figure 15—Aspen harvesting operation on the Coconino National Forest, Arizona. Eight-foot bolts are being cut here for production of excelsior. This operation illustrates use of a less significant timber species, as well as harvesting for one of the relatively minor products. In 1966 the principal aspen harvests were in Colorado (saw logs, excelsior, and match stock), New Mexico (saw logs), Utah (saw logs and excelsior), Arizona (saw logs and excelsior). The output of minor products (all roundwood except saw logs, veneer logs, and pulpwood) accounted for about 8 percent of the 1966 output of roundwood in the Rocky Mountain States.

Forests were easily the leading land ownership source in 1966. The second most important source was other public lands, a classification which includes not only lands under Federal management but also State, county, and municipal lands. These lands provided 24 percent (21 MMCF) of the 1966 output. Both the National Forests and the other public lands⁶ increased their percentage of the total output in 1966 over their contributions in 1962, which were 69 percent and 22 percent respectively. Forest industry lands and other private lands

had reduced outputs in 1966 as compared with their outputs for 1962.

Fewer sawmills produced more lumber per mill

Arizona provided no exception to the general trend of declining sawmill numbers and increased average production per active mill. The 23 sawmills active in 1966 had an average lumber production of 19 MMBF, a considerable increase over the 12 MMBF per mill for the 28 mills active in 1962, and over the 9 MMBF per mill of the 38 mills operating in 1960. Considering the short period of time,

⁶Principally Apache Indian Reservation lands.

Table 16. — Active sawmills and average annual production by production class

Production class (BF/yr.)	Year	Active	Average annual	Total
		sawmills	production ¹	lumber production
		Number	MMBF	Percent
10 million and more	1960	(2)	(2)	(2)
	1962			
	1966	10	39.3	89
1 to 10 million	1960	27	12.1	99
	1962	20	16.2	99
	1966	8	5.8	11
Less than 1 million	1960	11	.3	1
	1962	8	.2	1
	1966	5	.3	(3)

¹ 1960 averages derived from a cooperative lumber survey by the Bureau of the Census and the Intermountain Station; 1962 and 1966 averages obtained by prorating the Bureau of the Census' lumber production figures among mill classes on the basis of the Intermountain Station's surveys of saw-log receipts.

² To avoid the possibility of disclosing individual operations in 1960 and 1962, data for the few mills in this class were included in the 1 to 10 million class.

³ Less than 0.05 percent.

these have been exceptionally rapid changes. Arizona's 1966 output per mill was the highest of any of the Mountain States and was about three times the Mountain States average of 6.4 MMBF.

A more detailed picture of the changes in sawmill numbers, size classes, and average lumber production over the 6-year period is given in table 16. Arizona had two pulpmills operating in 1966, one producing both kraft pulp and groundwood, the other producing only groundwood.

Plant byproducts volume and plant residues increased since 1962

The output of plant byproducts in 1966 (19 MMCF) was nearly 18 times that of 1962 (1.1 MMCF). Although industry growth has resulted in some increase in plant residues (13.2 MMCF in 1966 as compared to 10.4 MMCF in 1962), the fact that the rise was small compared to the increase in plant byproducts is evidence of substantial gains in roundwood utilization in manufacturing plants, and in the utilization of material that formerly would have become plant residues.

Nearly four-fifths of roundwood products came from growing stock

Of the 90 MMCF of roundwood products output in 1966, 71 MMCF (79 percent) were from growing stock on commercial forest land. Cull and dead trees on commercial forest land, and harvesting of trees on other lands provided the remaining 21 percent.

Roundwood products comprised 88 percent of all removals from growing stock. Additional removals from growing stock were in the form of logging residues (9 percent, or 7.5 MMCF) and other removals through timber-stand improvement operations, land clearing, or changes in land use, which amounted to an estimated 2.7 MMCF, or 3 percent of all removals from growing stock.

Total sawtimber removals from commercial forest land were 484 MMBF with more than 91 percent (443 MMBF) going into products. Logging residues accounted for 24 MMBF, and other removals for 17 million.

Tables 51 through 53, in Appendix B, present additional statistics concerning timber products of Arizona.

COLORADO

Colorado's output of nearly 51 MMCF of roundwood products in 1966 ranked it fifth in the Mountain States and the volume amounted to 6 percent of the Mountain States total output. Production was 40 percent above that of 1962 and was more than one and one-half times that of 1952 (figure 16). Colorado's percentage increase in output since 1962 was the third largest in the Mountain States.

Saw logs accounted for more than three-fourths of roundwood output

The volume of saw-log output in 1966 was 39 MMCF (252 MMBF) and represented 77 percent of the total volume of roundwood products. Saw-log output increased 25 per-

cent as compared to 1962. Veneer logs⁷ were second in volume with 5 MMCF (33 MMBF) and contributed 10 percent of the roundwood output. Round mine timbers accounted for 2.6 MMCF and contributed 5 percent of the output, the remaining 8 percent consisting of volume in poles, posts, fuelwood, pulpwood, and other roundwood for a variety of uses.

Saw-log production continued to parallel total roundwood output with respect to percent of increase since 1952. The total output of other products made a sharp relative increase between 1962 and 1966. Comparisons

⁷Veneer logs used in Colorado are of average saw-log quality.

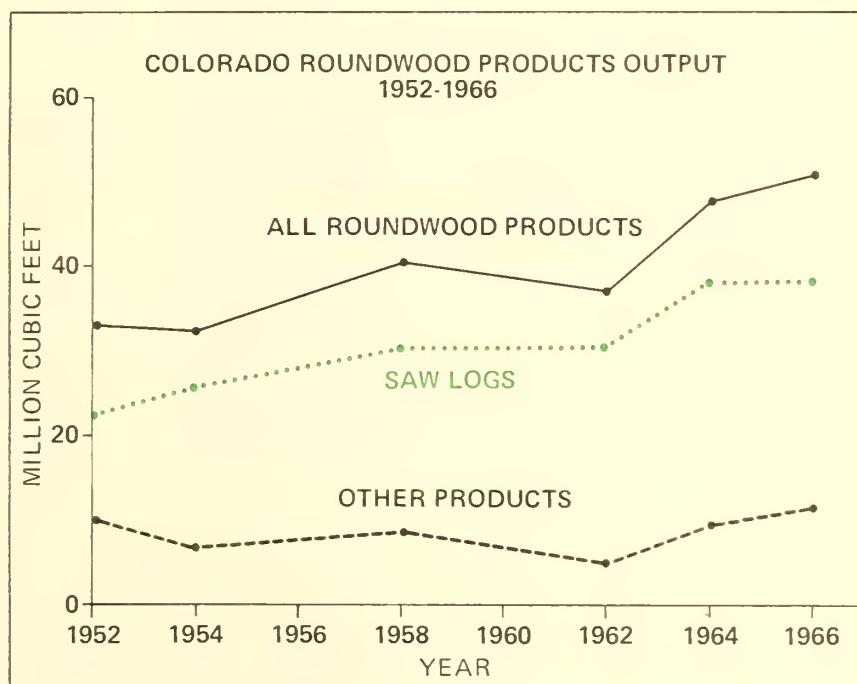


Figure 16

Table 17.—Roundwood products output, 1962 and 1966, and percent change

Product	Unit of measure	1962	1966	Percent change
Saw logs	Thousand board feet	184,645	252,145	37
Veneer logs	Thousand board feet	--	32,930	--
Pulpwood	Thousand standard cords	3	2	-33
Commercial poles	Thousand pieces	53	45	-15
Posts	Thousand pieces	368	626	70
Mine timbers	Thousand cubic feet	1,411	2,574	82
Miscellaneous industrial wood ¹	Thousand cubic feet	1,316	593	-55
Miscellaneous farm timbers	Thousand cubic feet	373	921	147
Fuelwood	Thousand standard cords	10	9	-10
All products	Thousand cubic feet	36,433	50,879	40

¹Includes products such as house logs, excelsior bolts, match stock, and similar items.

for these other products, as well as for saw logs, are shown in table 17.

More than one-half the counties in Colorado contributed volume to roundwood products output for 1966. Of the 252 MMBF of saw logs harvested from Colorado timberlands, just under 12 percent came from Mineral County and 10 percent from Hinsdale County. Veneer-log output from within the State (33 MMBF) came from Dolores and Montezuma Counties with 65 and 35 percent respectively.

Nearly all products harvested from Colorado timberlands were used by industries within the State. The round pulpwood was exported to the Lake States and a portion of the commercial poles was shipped to Wyoming.

Spruce led all species in product volume

Spruce (mainly Engelmann spruce) led all species in total roundwood production as well as in both saw-log and veneer-log output. Spruce, ponderosa pine, and lodgepole pine accounted for nearly nine-tenths of all roundwood output in 1966 (figure 17). The relative importance of these species is shown as follows:

Species	All roundwood	Saw logs
	(Percent)	
Spruce	52	60
Ponderosa pine	18	14
Lodgepole pine	17	14
Other species	13	12
Total	100	100

Species other than those shown which are of some importance, especially for saw logs, are the true firs and Douglas-fir in that order.

The general increase in roundwood volume from 1962 to 1966 consisted mainly of substantial gains in output of ponderosa pine (123 percent) and spruce (68 percent). The output of lodgepole pine was down 28 percent and Douglas-fir, 16 percent.

National Forests supplied nine-tenths of roundwood volume

The National Forests of Colorado were the source of 46 MMCF, or 91 percent, of the roundwood products in 1966. Other public lands supplied 2.4 MMCF, or about 5 percent, and private lands, 2 MMCF, or 4 percent.

Output from National Forest lands in 1966 increased 56 percent over 1962. Output from all other classes of ownership decreased somewhat from 1962.

Fewer sawmills produced more lumber

Colorado had 116 active sawmills in 1966 as compared to 170 in 1962. Average lumber production per mill has nearly doubled since 1962 and is up to 2.2 MMBF, but is below the Mountain States average of 6.4 MMBF. Table 18 presents production and number of sawmills for selected years. Almost the entire decrease in the total number of active mills occurred in the small size class, with most of these mills going out of business.

Lumber production shown in table 18 resulted from processing of logs imported from other States as well as those from Colorado timberlands. Saw-log imports into Colorado

amounted to 22 MMBF, with 64 percent coming from New Mexico and 36 percent from Wyoming. In addition to saw logs, a small number of posts were imported from Wyoming.

Plant byproducts volume increased since 1962

The volume of byproducts in 1966 was 2.5 MMCF. Industrial sources of these materials and types of byproducts are shown in table 19.

The volume of byproducts in 1966 reflects an 80 percent increase over the 1962 volume. Although plant residues increased 25 percent since 1962, to 19.9 MMCF in 1966, there is evidence of better utilization in that wood chips (shipped mainly to Lake States plants) were being produced and increased quantities of residues were being used for fuel. The 1966 residues volume was about equally divided between coarse and fine material.



Figure 17

Table 18. — Active sawmills and average annual production by production class

Production class (BF/yr.)	Year	Active	Average annual	Total
		sawmills	production ¹	lumber production
		Number	MMBF	Percent
10 million and more	1957 (
	1962)	(²)	(²)	(²)
	1966	7	16.9	47
1 to 10 million	1957	47	2.9	72
	1962	45	3.9	84
	1966	35	3.2	44
Less than 1 million	1957	227	.2	28
	1962	125	.3	16
	1966	74	.3	9

¹ 1957 averages derived from a cooperative lumber survey by the Bureau of the Census and the Intermountain Station; 1962 and 1966 averages obtained by prorating the Bureau of the Census' lumber production figures among mill classes on the basis of the Intermountain Station's surveys of saw-log receipts.

² To avoid the possibility of disclosing individual operations in 1957 and 1962, data for the few mills in this class were included in the 1 to 10 million class.

Table 19. — Volume of plant byproducts by industrial source and use class, 1966

Industrial source	All byproducts	Fiber ¹	Industrial fuel	Domestic fuel	Other byproducts ²
	Million cubic feet				
Lumber industry	2.1	0.2	0.6	0.2	1.1
Plywood industry	.4	0	0	0	.4
Total	2.5	0.2	0.6	0.2	1.5

¹ Mainly chips and sawdust for pulpwood.

² Includes livestock bedding, mulch, and small dimension and specialty items.

Nearly all roundwood products came from growing stock

Over 97 percent (49 MMCF) of Colorado's harvest of roundwood products came from the growing stock inventory on commercial forest land. Cull and dead trees on commercial forest land and harvesting of trees on other lands provided the remaining volume of products. More than 87 percent (49 MMCF) of the total removals from growing stock went into roundwood products. Additional removals from growing stock were in the form of logging residues (8 percent, or 4 MMCF) and other removals through timber-stand im-

provement operations, land clearing, or changes in land use, estimated to be about 3 MMCF, or 5 percent of all removals from growing stock.

Total sawtimber removals from commercial forest land were 339 MMBF with more than 91 percent (310 MMBF) going into products. Logging residues accounted for 4 percent (12 MMBF), and other removals for about 5 percent (17 MMBF).

Tables 54 through 57, in Appendix B, present additional statistics concerning timber products of Colorado.

NEVADA

Product volume from Nevada timberlands in 1966 was smallest on record for any year

Output of roundwood products from Nevada timberlands in 1966 amounted to 223 MCF which was by far the smallest production of any of the Mountain States. The 1966 product volume for the State was the smallest of any of the years for which estimates are available over the period 1952 to 1966. Although Nevada's year-to-year timber production characteristically has been erratic, there is evidence that output followed a general upward trend from 1952 to 1958 and subsequently declined to less than the volume in 1952 (figure 18).

Sawmills depended on logs from California

Nevada's timber industry is unique in several respects. Although the State has a large area of noncommercial forest that provides small-dimension material such as posts and fuelwood, it has relatively little commercial timberland. Heavy dependence has been placed on California as a source of saw logs. The unsubstantial timber supply situation, together with a small population and relatively limited local demand for wood products, has resulted in a small industry consisting mainly of the two sawmills not far from the California line. In 1966 these mills received their entire volume of saw logs (44.4 MMBF) from

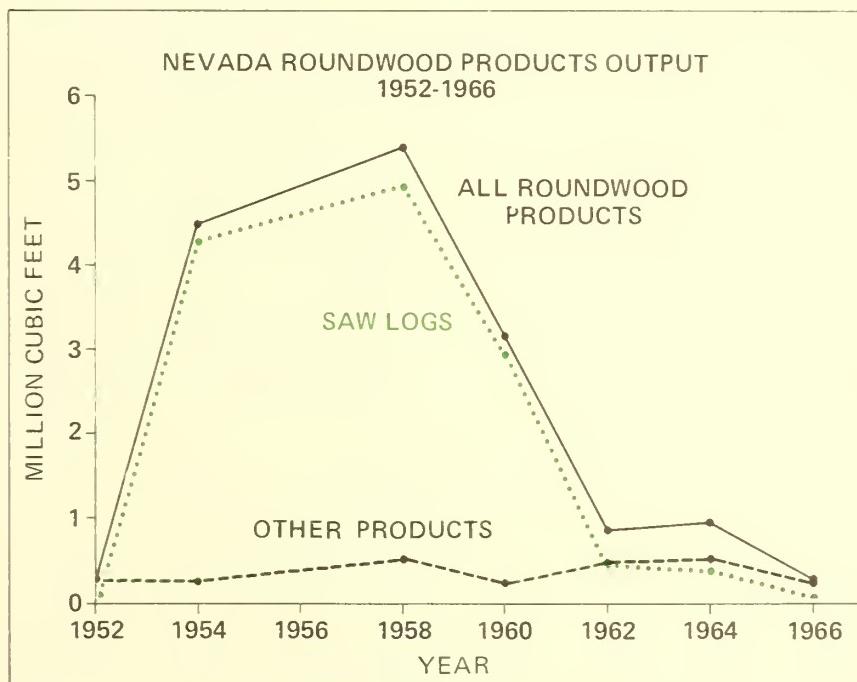


Figure 18

California. Although a small volume of saw logs was harvested in Nevada (11 MBF of ponderosa pine from White Pine County) it was shipped to industry in Utah. As shown by figure 18 saw logs accounted for less than one-half the volume of products harvested from Nevada timberlands in 1962 and succeeding years. In 1966 the volume reported for products other than saw logs consisted of 2,000 cords of fuelwood and 16,000 posts.

The source of the 1966 output of roundwood from Nevada timberlands by land ownership was as follows:

<i>Land ownership class</i>	<i>MCF</i>
National Forest	43
Other public	77
Private	<u>103</u>
Total	223

Lumber production shows little recent change; byproduct volume up sharply

Lumber production for Nevada in 1966 is reported by U. S. Bureau of the Census (1968) as 37 MMBF. As shown by the following tabulation of census estimates, this volume lies within the range of output for the preceding 6 years:

<i>Year</i>	<i>Lumber production</i>
	<i>(MMBF)</i>
1960	34
1961	31
1962	37
1963	33
1964	36
1965	39
1966	37

Although the two mills that produced the 37 MMBF in 1966 differed in size, an average of the two (18.5 MMBF) is useful for comparison with similarly derived averages for other Rocky Mountain States. The only State with a higher average was Arizona (19.2 MMBF). The average for all mills in the Rocky Mountain States was 6.4 million.

The volume of plant byproducts amounted to 1.8 MMCF in 1966 — 23 times the estimated output for 1962 — and came entirely from sawmills. Fifty-six percent of the 1966 volume went into industrial fuel, the remainder into pulp chips. Despite the big increase in plant byproducts, unused residues went up from 0.25 MMCF in 1962 to 1.83 million in 1966. The latter volume came entirely from sawmills and about 26 percent consisted of coarse residues (slabs, edgings, and trimmings) and 74 percent fine material (sawdust and shavings).

Only one-third of roundwood output came from growing stock

Of the 223 MCF of roundwood products harvested in Nevada in 1966, only 76 MCF or about one-third of the total came from the growing stock inventory on commercial forest land. The other two-thirds came largely from harvesting on other lands, although there may have been some material from cull and dead trees harvested within the commercial forest.

Total sawtimber removals from commercial forest land were 34 MBF with 97 percent going into products. Logging residues accounted for nearly all the remaining volume.

Tables 58 and 59, in Appendix B, present additional statistics concerning timber products of Nevada.

NEW MEXICO

New Mexico timberlands in 1966 yielded 51 MMCF or 6 percent of the total output from lands within the Mountain States. The output showed an increase of 10 percent over 1962 and was nearly 1.8 times the volume in 1952 (figure 19). In comparison, production for the Mountain States increased 25 percent over the 1962-66 period and 79 percent between 1952 and 1966 (figure 20).

Saw logs accounted for more than four-fifths of roundwood output

The volume of saw-log output in 1966 was 42 MMCF (271 MMBF) which represents an 18 percent increase since 1962. The saw-log

output constituted 83 percent of the total roundwood products output in 1966, about 5 percent more than in 1962. Since New Mexico has no plywood or pulp and paper industries, nearly all the remaining 9 MMCF of output (17 percent) consisted of posts, fuelwood, mine timbers, and miscellaneous farm timbers. The output of these products combined decreased 17 percent from 1962 volumes.

Saw logs continued to be the dominant timber product in New Mexico and their production in this State has maintained a fairly steady upward trend; this same trend has occurred in other Mountain States. New Mexico was the only Mountain State, however, to

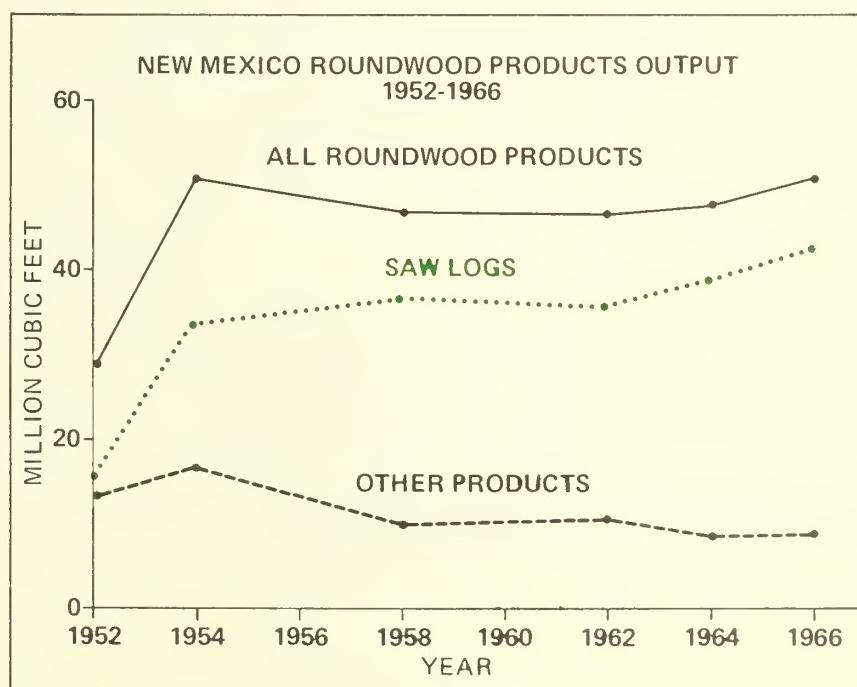


Figure 19



Figure 20. — Saw-log harvesting on the Santa Fe National Forest in New Mexico. Saw logs were the predominant roundwood product in the Rocky Mountain States in 1966. However, the saw-log proportion of the total roundwood output for the Mountain States decreased from 88 percent in 1962 to 80 percent in 1966. New Mexico was the only State in which the proportion of total roundwood used for saw logs increased between 1962 and 1966.

Table 20.—Roundwood products output, 1962 and 1966, and percent change

Product	Unit of measure	1962	1966	Percent change
Saw logs	Thousand board feet	247,620	271,485	10
Posts	Thousand pieces	235	163	-31
Mine timbers	Thousand cubic feet	410	236	-42
Miscellaneous farm timbers	Thousand cubic feet	183	938	413
Fuelwood	Thousand standard cords	134	85	-37
All products	Thousand cubic feet	¹ 46,259	50,986	10

¹Includes small volumes of miscellaneous industrial wood.

show an increase in the percentage of roundwood output accounted for by saw logs. It was also the only State not showing an increase in the percentage of roundwood output contributed by products other than saw logs. Table 20 shows miscellaneous farm timbers as the only category of roundwood products, with the exception of saw logs, which were more significant in 1966 than in 1962.

Sandoval County contributed by far the largest percentage (27.5 percent) to roundwood output from New Mexico timberlands. Leading counties and the percentages contributed are as follows:

County	Percent
Sandoval	27.5
McKinley	15.2
Colfax	13.6
Catron	10.6
All other counties	33.1
	100.0

About 14 MMBF of saw logs produced in New Mexico were exported to Colorado, leaving roughly 95 percent of the output for processing within the State.

Output was predominantly from ponderosa pine and public lands

Ponderosa pine, with 25 MMCF harvested for roundwood products, was by far the lead-

ing species in 1966. Other important species contributing to total roundwood output were Douglas-fir (9 million), spruce (7 million), and true firs (2 million). See figure 21.

Most species showed increases in volume harvested in 1966 compared to 1962; true firs led with a 42 percent increase. Douglas-fir and ponderosa pine followed with 24 and 10 percent increases, respectively. Spruce showed an 8 percent decline.

Public lands of New Mexico, principally National Forests and Navajo Indian Reservation lands, were the source of 29 MMCF of roundwood products in 1966, representing 57 percent of the total roundwood products output. Private lands supplied 22 MMCF or 43 percent. Output from National Forests in 1966 increased 31 percent to 26 MMCF as compared to 1962. Output from private ownership classes was down somewhat.

Sawmills decreased in number but showed an increase in average production

The number of active sawmills in New Mexico in 1966 decreased to 64 from the 85 mills active in 1962. The average production of the 64 mills was 4.1 MMBF as compared to the Mountain States average of 6.4 million for 1966. In comparison, average production of New Mexico's 85 mills in 1962 was 2.9 MMBF, and of the 117 mills in 1960, 1.9 million.

Table 21. — Active sawmills and average annual production by production class

Production class (BF/yr.)	Year	Active	Average annual	Total
		sawmills	production ¹	lumber production
		Number	MMBF	Percent
10 million and more	1960	(²)	(²)	(²)
	1962			
	1966	6	27.2	62
1 to 10 million	1960	37	5.2	85
	1962	31	7.3	93
	1966	17	5.1	33
Less than 1 million	1960	80	.4	15
	1962	54	.3	7
	1966	41	.3	5

¹ 1960 averages derived from a cooperative lumber survey by the Bureau of the Census and the Intermountain Station; 1962 and 1966 averages obtained by prorating the Bureau of the Census' lumber production figures among mill classes on the basis of the Intermountain Station's surveys of saw-log receipts.

² To avoid the possibility of disclosing individual operations in 1960 and 1962, data for the few mills in this class were included in the 1 to 10 million class.

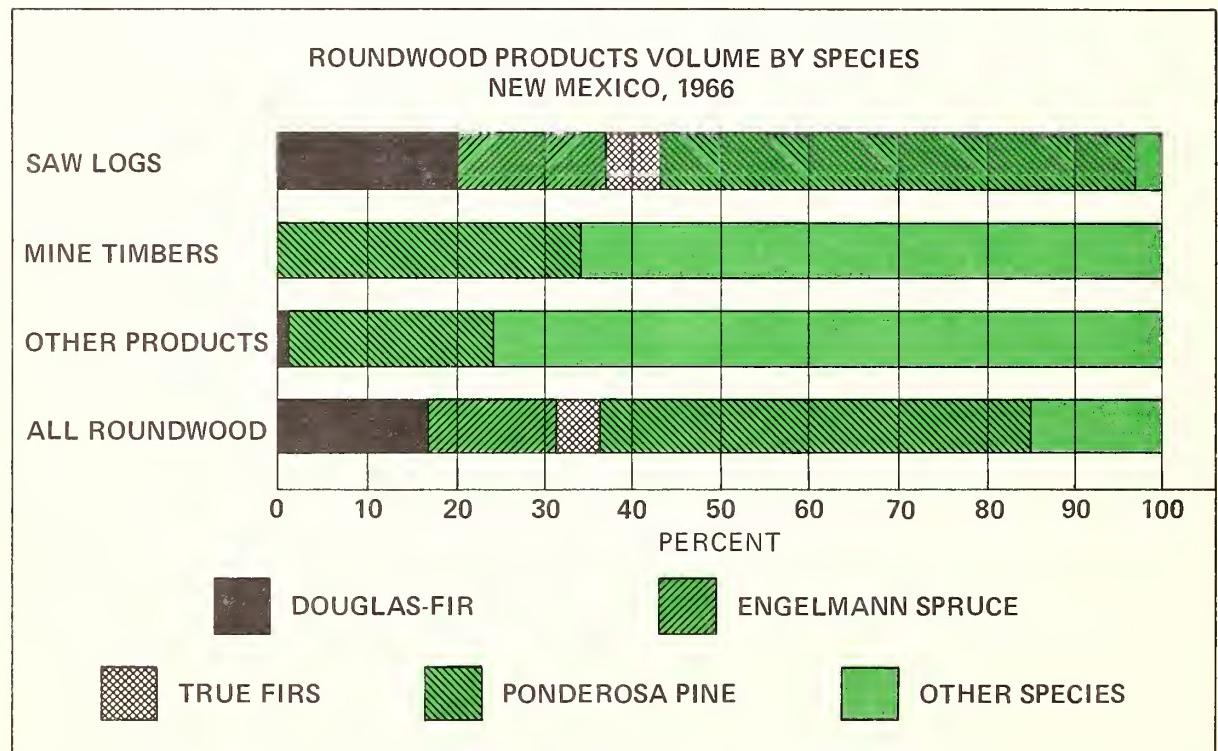


Figure 21

Information regarding the number of active sawmills and average production per mill for selected years is given in table 21.

Log receipts at New Mexico mills in 1966 included 4.6 MMBF received from Arizona. The volume of saw-log imports was considerably less than the 14.4 MMBF indicated earlier as exported to Colorado and represents less than 2 percent of the total saw-log receipts.

**Volume of plant byproducts increased;
residue volume decreased**

The 1966 volume of plant byproducts amounted to 6.1 MMCF, all from the lumber industry. Distribution of this volume by type of product is as follows:

<i>Byproduct</i>	<i>MCF</i>
Wood chips for pulp	4,501
Industrial fuel	1,314
Domestic fuel	68
Other ¹	237

¹Includes such byproducts as livestock bedding, mulch, and small dimension and specialty items.

The 1966 volume of byproducts represents slightly more than three times the volume produced in 1962. This increased utilization, especially the production of wood chips (shipped mainly to Arizona), partially explains the reduction in plant residues from 18

MMCF in 1962 to 16 million in 1966. Between 1962 and 1966, coarse residues showed a reduction of 30 percent, while fine residues increased about 7 percent.

**Nearly all roundwood products
were cut from growing stock**

Of the total volume of roundwood products harvested in New Mexico in 1966, 84 percent, or 43 MMCF, came from the growing stock inventory on commercial forest land. The remaining 16 percent of roundwood products came from harvesting of trees on other lands and from cull and dead trees on commercial forest land.

Eighty-seven percent of the total removals from growing stock went into roundwood products. Additional removals from growing stock were in the form of logging residues (10 percent, or 5.1 MMCF) and other removals through timber-stand improvement operations, land clearing, or changes in land use, estimated to be 1.3 MMCF, or 3 percent of all removals from growing stock.

Total sawtimber removals from commercial forest land were 290 MMBF with 92 percent (266 MMBF) going into products; logging residues accounted for 5 percent (16 MMBF), and other removals for 3 percent (8 MMBF).

Tables 60 through 62, in Appendix B, present additional statistics concerning timber products of New Mexico.

UTAH

Output of roundwood products from Utah timberlands in 1966 amounted to 14 MMCF; this volume was less than 2 percent of the total obtained from all lands within the Mountain States. Production showed an increase of 17 percent over 1962 and was a little more than double the 1952 volume (figure 22). In comparison, production for the Mountain States increased 25 percent over the 1962-1966 period and 79 percent between 1952 and 1966.

Saw logs accounted for most of product volume; all products increased since 1962

The 1966 saw-log volume of 12.1 MMCF

(77.8 MMBF) constituted 86 percent of the total volume of roundwood products. The remainder of the volume consisted of mine and farm timbers, posts, fuelwood, and miscellaneous industrial wood. Statistics on output for selected years during the period of 1952-1966 indicate that saw-log output has pretty much paralleled total roundwood output (figure 22); from 1960 on, saw logs have comprised more than 85 percent of the volume. Table 22 indicates that all products showed an increased volume in 1966 as compared with 1962, and that percentagewise most products increased to a greater extent than saw logs.

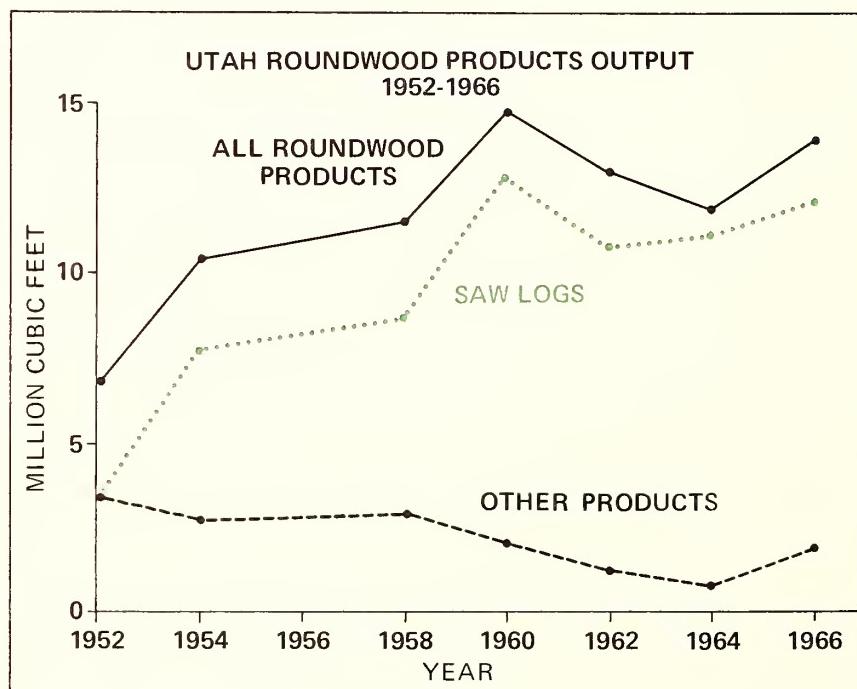


Figure 22

Table 22. — Roundwood products output, 1962 and 1966, and percent change

Product	Unit of measure	1962	1966	Percent change
Saw logs	Thousand board feet	64,938	77,750	20
Posts ¹	Thousand pieces	16	60	275
Mine timbers	Thousand cubic feet	245	455	86
Miscellaneous industrial wood ²	Thousand cubic feet	703	735	5
Miscellaneous farm timbers	Thousand cubic feet	88	306	248
Fuelwood	Thousand standard cords	1	4	300
All products	Thousand cubic feet	12,005	14,030	17

¹ Includes commercial poles to avoid disclosure of individual operations.

² Includes products such as converter poles, excelsior bolts, and similar items.

Two counties provided the major portion of the saw-log output from Utah timberlands — San Juan (32.1 percent) and Garfield (31.5 percent). Duchesne County with 11.4 percent was third.

Except for 1.5 MMBF of logs exported to mills in Wyoming, all material harvested in Utah was processed by industries within the State.

Product volume was one-half ponderosa pine and mainly from National Forest lands

Ponderosa pine was by far the leading spe-

cies and constituted one-half of the total cubic volume of roundwood. Other leading species were Engelmann spruce (19 percent) and lodgepole pine (18 percent). Important differences occurred among individual products or product groups with respect to relative significance of species, as shown in table 23.

Ponderosa pine made the greatest gain in recent years — about three times the 1962 volume was harvested in 1966. Lodgepole pine increased 22 percent but Engelmann spruce decreased 34 percent, and the combined volume of other species dropped 48 percent.

Table 23. — Percent distribution of roundwood products by species, 1966

Product	Engelmann spruce	Lodgepole pine	Ponderosa pine	Other species	Total all species
-Percent-					
Saw logs	20	12	57	11	100
Mine timbers	9	87	1	3	100
Miscellaneous industrial wood	28	47	0	25	100
Posts, fuelwood, misc. farm timbers	1	43	2	54	100
All products	19	18	50	13	100

Table 24.—Active sawmills and average annual production by production class

Production class (BF/yr.)	Year	Active	Average annual	Total
		sawmills	production ¹	lumber production
		Number	MMBF	Percent
10 million and more	1960	(2)	(2)	(2)
	1962			
	1966	2	19.8	55
1 to 10 million	1960	12	3.9	68
	1962	17	3.4	86
	1966	11	2.3	35
Less than 1 million	1960	87	.3	32
	1962	56	.2	14
	1966	37	.2	10

¹ 1960 averages derived from a cooperative lumber survey by the Bureau of the Census and the Intermountain Station; 1962 and 1966 averages obtained by prorating the Bureau of the Census' lumber production figures among mill classes on the basis of the Intermountain Station's surveys of saw-log receipts.

² To avoid the possibility of disclosing individual operations in 1960 and 1962, data for the few mills in this class were included in the 1 to 10 million class.

Ninety percent of the product volume came from National Forest lands. State, Indian, and Bureau of Land Management lands provided 4 percent and private lands 6 percent.

Number of sawmills continued to decline; production increased

The trend over recent years towards fewer mills but greater average production per mill continued in 1966. Average production of the 50 mills active in 1966 was 1.44 MMBF. In comparison, average production of the 73 mills in 1962 was 0.92 million feet, and of the 99 mills in 1960, 0.70 million feet. As a further comparison, average production of all mills in the Mountain States in 1966 was 6.4 MMBF. Table 24 permits comparisons for 1960, 1962, and 1966 of Utah mills by selected size-class groupings.

Log receipts at Utah mills consisted almost entirely of material harvested from timberlands within the State. A very small volume (11 MBF) was imported from Nevada.

Plant byproducts and residues both increased

The volume of plant byproducts in 1966

amounted to 0.5 MMCF. About 88 percent of this material was used for livestock bedding, mulch, and small dimension and specialty items; the remainder was industrial and domestic fuelwood.

Production of plant byproducts has never been a significant feature of Utah timber industries. No volume was reported for 1962, although some material undoubtedly was used for fuelwood. The lack of a nearby market for pulp chips has been a handicap. No output of chips was reported for 1966, but subsequent production by at least one mill is expected to increase the volume of plant byproducts in future years.

Six MMCF of residue resulted from processing of roundwood by Utah timber industries in 1966. Roughly one-half of this volume was coarse residues (slabs, edgings, and trimmings) and one-half fine material (sawdust and shavings). Ninety-five percent of the residue volume resulted from lumber production, the remainder from the variety of miscellaneous timber industries. In comparison with 1962, residue volume was up 29 percent. This contrasts with a 19 percent reduction for the Mountain States area over the same period.

Bulk of product volume came from growing stock inventory

Of the total volume of roundwood products harvested in Utah in 1966, 94 percent, or 13 MMCF, came from the growing stock inventory on commercial forest land. Cull and dead trees on commercial forest land and timber harvesting on other lands accounted for the remaining 6 percent.

Eighty-five percent of the total removals from growing stock went into roundwood

products; the remainder (2.3 MMCF) was logging residues and trees lost from inventory as a result of timber-stand improvement operations, land clearing, and changes in land use.

Total sawtimber removals from commercial forest land were 85 MMBF with 89 percent (75 MMBF) going into products. Logging residues and other removals accounted for the remaining volume.

Tables 63 through 65, in Appendix B, present additional statistics concerning timber products of Utah.

LITERATURE CITED

- Hair, Dwight.
1963. The economic importance of timber in the United States. U. S. Dep. Agr. Misc. Pub. 941, 91 p., Wash., D. C., U. S. Govt. Printing Office.
- Spencer, John S., Jr.
1964. Forest products output in Utah and Nevada, 1962. U.S. Forest Serv. Res. Pap. INT-12, 18 p.
- _____, and Thomas O. Farrenkopf.
1964. Timber products output in Colorado, Wyoming, and western South Dakota, 1962. U. S. Forest Serv. Res. Pap. INT-14, 18 p.
- U. S. Bureau of the Census.
1967. Census of Agriculture 1964. Statistics for States and Counties Vol. I, parts 19, 38, 39, 40, 41, 42, 43, 45. Wash., D. C., U. S. Govt. Printing Office.
- _____.
1968. Current industrial reports: Lumber production and mill stocks 1967. Ser. MA-24T (67)-1, 7 p.
- U. S. Forest Service
1958. Timber resources for America's future. Forest Resource Rep. 14, 713 p., Wash., D. C., U. S. Govt. Printing Office.
- U. S. Forest Service.
1965. Timber trends in the United States. Forest Resource Rep. 17, 235 p., illus. Wash., D. C., U. S. Govt. Printing Office.
- Ware, E. R.
1936. Forests of South Dakota, their economic importance and possibilities. U. S. Forest Serv. Lake States Forest Exp. Sta., St. Paul, Minn. 28 p., illus.
- Wilson, Alvin K.
1964. Output of timber products in Montana, 1962. U. S. Forest Serv. Res. Pap. INT-11, 10 p.
- _____.
1964. Output of timber products in Idaho, 1962. U. S. Forest Serv. Res. Pap. INT-13, 10 p.
- _____.
1964. Timber products output in Arizona and New Mexico, 1962. U. S. Forest Serv. Res. Pap. INT-15, 8 p.
- _____, and John S. Spencer, Jr.
1967. Timber resources and industries in the Rocky Mountain States. U. S. Forest Serv. Resource Bull. INT-7, 67 p.

APPENDIX A

Terminology

Survey Methods and

Reliability of Data

Terminology

Cull Tree

Live tree of sawtimber or poletimber size that is unmerchantable for saw logs, now or prospectively, because of rot or other defect, or species.

Forest Land

Land at least 16.7 percent stocked by forest trees of any size, or formerly having had such tree cover, and not currently developed for nonforest use. (Note: Stocking is measured by comparison of basal area and/or number of trees, by age or size and spacing with specified standards. The minimum area for classification of forest land is 1 acre. Roadside, streamside, and shelterbelt strips of timber must have a crown width at least 120 feet wide to qualify as forest land. Unimproved roads and trails, streams, or other bodies of water or clearings in forest areas shall be classed as forest if less than 120 feet in width.)

The principal classes of forest land are:

Commercial forest land. — Forest land producing or capable of producing crops of industrial wood and not withdrawn from timber utilization. (Note: Areas qualifying as commercial forest land have the capability of producing in excess of 20 cubic feet per acre per year of industrial wood under management. Currently inaccessible and inoperable areas are included, except when the areas involved are small and unlikely to become suitable for production of industrial wood in the foreseeable future.)

Noncommercial forest land. — (1) Unproductive forest land incapable of yielding crops of industrial wood, because of adverse site conditions, and (2) productive-reserved forest land.

Growing Stock Trees

Live trees of commercial species qualifying as desirable or acceptable trees. (Note: Excludes rough, rotten, and dead trees.)

Growing Stock Volume

Net volume in cubic feet of growing stock trees 5.0 inches d.b.h. and over from a 1-foot stump to a minimum 4.0-inch top diameter outside bark of the central stem or to the point where the central stem breaks into limbs.

Hardwoods

Dicotyledonous trees, usually broad-leaved and deciduous.

Industrial Wood

All roundwood products, except fuelwood.

Logging Residues from Growing Stock

The net cubic-foot volume of live sawtimber and poletimber trees cut or killed by logging on commercial forest land and not converted to timber products.

Other Removals

The net volume of growing stock trees removed from the inventory by cultural operations, such as timber-stand improvements, land clearing, and changes in land use.

Ownership

Property owned by one owner, regardless of the number of parcels in a specified area.

Ownership Classes

National Forest lands. — Federal lands which have been legally designated by Executive order or statute as National Forests or purchase units, and other lands under the administration of the USDA Forest Service, including experimental areas and Bankhead-Jones Title III lands.

Other public lands. — Federal lands other than National Forests, including lands administered by the Bureau of Land Management, Bureau of Indian Affairs, and miscellaneous Federal agencies. Also, lands owned by States, counties, and local public agencies, or lands

leased by these governmental units for more than 50 years.

Forest industry lands. — Lands owned by companies or individuals operating wood-using plants.

Other private lands. — Privately owned lands other than forest industry lands.

Plant Byproducts

Wood products, such as pulp chips, obtained incidental to production of other manufactured products.

Plant Residues

Wood materials from manufacturing plants not utilized for some product. (Note: Includes slabs, edgings, trimmings, miscuts, sawdust, shavings, veneer cores and clippings, and pulp screenings.)

Poletimber Tree

Growing stock trees of commercial species at least 5.0 inches d.b.h., but smaller than sawtimber size.

Principal Tree Species

Softwoods

Douglas-fir	<i>Pseudotsuga menziesii</i>
Fir, subalpine	<i>Abies lasiocarpa</i>
Fir, corkbark	<i>A. lasiocarpa</i> var. <i>arizonica</i>
Fir, grand	<i>A. grandis</i>
Fir, white	<i>A. concolor</i>
Hemlock, mountain	<i>Tsuga mertensiana</i>
Hemlock, western	<i>T. heterophylla</i>
Juniper	<i>Juniperus</i> spp.
Larch, western	<i>Larix lyallii</i>
Pine, limber	<i>Pinus flexilis</i>
Pine, lodgepole	<i>P. contorta</i>
Pine, ponderosa	<i>P. ponderosa</i>
Pine, western white	<i>P. monticola</i>
Pine, whitebark	<i>P. albicaulis</i>
Pine, pinyon	<i>P. spp.</i>
Redcedar, western	<i>Thuja plicata</i>
Spruce, Engelmann	<i>Picea engelmannii</i>
Spruce, blue	<i>P. pungens</i>
Spruce, white	<i>P. glauca</i>

Hardwoods

Aspen, quaking	<i>Populus tremuloides</i>
Cottonwood	<i>P. spp.</i>
Birch, paper	<i>Betula papyrifera</i>

Roundwood Products

Logs, bolts, or other round sections cut from trees for industrial or consumer uses. (Note: Includes saw logs; veneer logs and bolts; cooperage logs and bolts; pulpwood; fuelwood; pilings; poles; posts; hewn ties; mine timbers; and various other round, split, or hewn products.)

Saw Log

A log meeting minimum standards of diameter, length, and defect, including logs at least 8 feet long, sound and straight and with a minimum diameter inside bark for softwoods of 6 inches (8 inches for hardwoods) or other combinations of size and defect specified by Regional standards.

Sawtimber Trees

Live trees of commercial species containing at least a 12-foot saw log and meeting Regional specifications for freedom from defect. Softwoods must be at least 9.0 inches in diameter breast height, except in California, Oregon, Washington, and coastal Alaska where the minimum diameter is 11.0 inches. Hardwoods must be at least 11.0 inches in diameter in all States.

Sawtimber Volume

Net volume of the saw-log portion of live sawtimber in board feet, International 1/4-inch rule.

Softwoods

Coniferous trees, usually evergreen having needles or scalelike leaves.

Timber Products

Roundwood products and plant byproducts. (Note: Timber products output includes

roundwood products cut from growing stock on commercial forest land; from other sources, such as cull trees, salvable dead trees, limbs, and saplings; from trees on noncommercial and nonforest lands, and from plant byproducts.)

Timber Removals

The net volume of growing stock trees removed from the inventory by harvesting; cultural operations, such as timber-stand improvement; land clearing; or changes in land use.

Survey Methods and Reliability of Data

The 1966 survey of saw-log receipts was based on a listing of sawmills in the Rocky Mountain States prepared early in 1967, and made as complete as possible through reviews by Forest Service and State forestry personnel. Operators of all listed mills were contacted by mail to obtain their saw-log receipts for 1966. Also, sawmills outside the Rocky Mountain States considered as possible recipients of logs from the Rocky Mountain States were asked to report. Field sampling provided data for estimating, within acceptable error limits, the receipts of sawmill operators who did not furnish mail reports (nonrespondents).

The half-confidence intervals for estimates of 1966 State totals are shown below. The true totals are predicted to lie within plus or minus their respective half-confidence intervals of the estimated totals. The odds are two to one that the confidence interval prediction is correct.

<i>State</i>	<i>Half-confidence interval for saw logs (MBF)</i>	<i>Half-confidence interval of total saw-log receipts (Percent)</i>
Idaho	7,636	0.46
Montana	12,153	.97
Western South Dakota	963	2.17
Wyoming	6,050	3.49
Arizona	(¹)	0
Colorado	7,875	3.12
Nevada	(¹)	0
New Mexico	3,768	1.39
Utah	409	.53

¹ Reports obtained from all mills.

All veneer and plywood plants known to receive veneer logs from the Rocky Mountain States were contacted by mail to obtain their veneer log receipts. Nonrespondents were contacted in the field. Estimates for veneer-log receipts in Colorado and Idaho are considered to be without sampling error since reports were obtained from all plants. The estimated total volume of veneer-log receipts from Montana plants was 183,449 MBF. Sixty-six percent of this volume was reported directly from five of the six plants operating in the State in 1966. The volume of receipts for the remaining plant was an estimate based on 1966 plywood production figures for the plant.

Reports were obtained by mail, and field contacts were made with all nonrespondent plants known to receive round pulpwood, commercial poles, and miscellaneous industrial wood from the Rocky Mountain States in 1966. Estimates for these products are considered to be without sampling error.

Estimates for 1966 production of posts, fuelwood, and miscellaneous farm timbers were derived from reports furnished by National Forests, State forestry offices, Bureau of Land Management, Bureau of Indian Affairs, and Bureau of Reclamation. These estimates were supplemented by trend estimates from U. S. Bureau of Census publications showing farm use of these products. Since this procedure precluded the computation of a sampling error by the methods used for other products, no error estimates have been assigned.

Procedures for the survey of round mine timbers received at Rocky Mountain States mines were similar to those used for saw-log receipts. Mail contacts were made from lists of mine operators compiled from reports of State mine inspectors, State mining bureaus, and State industrial commissions. The Mining World Directory of Major United States Mining Operations was also used. Nonrespondents were sampled by field contacts. The half-confidence intervals for estimates of 1966 State totals are shown below. The true totals are predicted to lie within plus or minus their respective half-confidence intervals of the estimated totals. The odds are two to one that the confidence interval prediction is correct.

<i>State</i>	<i>Half-confidence interval for round mine timbers (MBF)</i>	<i>Half-confidence interval of total round mine-timber receipts (Percent)</i>
Idaho	(¹)	0
Montana	9,511	.32
Western South Dakota	(¹)	0
Wyoming	176	.04
Arizona	(¹)	0
Colorado	77,810	3.02
Nevada	(²)	0
New Mexico	(¹)	0
Utah	5,712	1.25

¹ All field sample mines contacted reported no round mine-timber receipts.

² No round mine-timber receipts reported.

APPENDIX B

Tables 25-65

ROCKY MOUNTAIN STATES

Table 25.—*Output of roundwood products from timberlands of the Rocky Mountain States by product and State, 1966*

State	Total output all products	Saw logs	Veneer logs	Pulpwood	Products		
					Commercial poles ^{1/}	Mine timbers	Miscellaneous ^{2/} industrial wood
<u>Thousands cubic feet</u>							
Idaho	316,188	259,806	39,236	9,172	3,571	142	751
Montana	238,231	195,603	27,884	3,753	2,472	2,974	256
W. South Dakota	15,859	6,912	--	4,645	--	1	--
Wyoming	33,523	27,065	--	141	3,616	478	28
Arizona	89,873	62,437	--	6,647	335	22	86
Colorado	50,879	39,335	5,005	201	837	2,574	593
Nevada	223	2	--	--	--	--	--
New Mexico	50,986	42,352	--	--	--	236	--
Utah	14,030	12,129	--	--	--	455	735
Total	809,792	645,641	72,125	24,559	10,831	6,882	2,449
							47,305

^{1/} Includes a small amount of piling.

^{2/} Includes house logs, converter poles, shingle bolts, excelsior bolts, match stock, charcoal wood, and similar items.

^{3/} Includes a small volume of commercial poles to avoid disclosure of individual operations.

Table 26.—Output of roundwood products from timberlands in the Rocky Mountain States by product, species group, and State, 1966.

State	Saw logs			Veneer logs			Mine timbers			Miscellaneous industrial wood			Miscellaneous farm timbers		
	All species	Soft woods	Hard woods	All species	Soft woods	Hard woods	All species	Soft woods	Hard woods	All species	Soft woods	Hard woods	All species	Soft woods	Hard woods
- - - Thousand board feet - - -															
Idaho	1,665,425	1,665,172	253	258,129	256,977	1,152	142	142	--	751	751	0	1,525	1,525	--
Montana	1,253,868	1,253,543	325	183,449	182,304	1,145	2,974	2,974	--	256	256	0	3,027	3,027	--
W. South Dakota	44,308	44,308	--	0	0	0	1	1	--	--	--	44	44	44	--
Wyoming	173,491	173,191	--	0	0	0	478	478	(6/)	28	28	0	1,768	1,698	70
Arizona	400,236	399,564	67	0	0	0	22	22	(6/)	86	86	8	78	556	556
Colorado	252,145	246,100	6,045	32,930	32,838	92	2,574	2,574	3	593	593	29	564	921	921
Nevada	11	11	0	0	0	0	--	--	--	--	--	--	--	--	--
New Mexico	271,485	267,033	4,452	0	0	0	236	236	81	155	155	--	938	938	--
Utah	71,750	75,381	2,369	0	0	0	455	453	2	735	735	0	306	306	--
Total	4,138,719	4,124,603	14,116	474,508	472,119	2,389	6,882	6,700	182	2,419	1,807	642	9,418	9,418	70

State	Pulpwood		Fuelwood		Commercial poles ^{2/}		Posts	
	All species	Soft-woods	Hard-woods	All species	Soft-woods	All species	Hard-woods	All species
Thousand standard cords								
Idaho	107	105	2	15	15	(4/)	19.	0
Montana	44	44	0	8	8	--	133	0
W. South Dakota	54	54	0	8	8	(2/)	(2/)	1,569
Wyoming	2	2	0	2	2	--	0	1,994
Arizona	77	77	0	226	226	--	0	292
Colorado	2	2	0	9	9	(4/)	18	0
Nevada	0	0	0	2	2	--	49	398
New Mexico	—	—	—	85	85	(4/)	0	626
Utah Total	286	284	0	0	4	(4/)	0	16 (L)
				359	359	(4/)	0	163
						(4/)	0	60
						(4/)	0	60
						(4/)	0	5,817
						(4/)	0	5,812

11 Includes house logs, converter noles, shingle bolts, excelsior bolts, match stock, charcoal wood, and similar items.

2/ Includes a small amount of billing

3/ Estimates of the amount of filling

International 1/4-inch log rule.

2/ Data for Wyoming and So

Less than 0.5 MCF.

Table 27.—Output of roundwood products from timberlands of the Rocky Mountain States by species and State, 1966

State	Species	Species								
		All species	Ponderosa	Douglas-fir	Engelmann spruce ^{1/}	True fir ^{2/}	Lodgepole pine ^{3/}	Western larch ^{3/}	Western white pine ^{3/}	Other ^{4/}
<u>Thousands cubic feet</u>										
Idaho	316,188	46,012	65,954	16,061	61,897	9,964	26,610	61,978	27,337	375
Montana	238,231	36,141	80,731	26,199	5,865	32,387	45,832	5,802	5,049	225
W. South Dakota	15,859	15,447	--	412	--	--	0	0	--	--
Wyoming	33,523	6,995	1,076	4,965	605	19,742	0	0	70	70
Arizona	89,873	62,372	6,442	693	3,816	0	0	0	16,345	205
Colorado	50,879	9,338	1,222	26,481	3,015	8,720	0	0	534	1,569
Nevada	223	24	--	--	23	--	0	--	176	(5/)
New Mexico	50,986	25,047	8,570	7,214	2,442	--	0	0	6,862	851
Utah	14,030	6,976	485	2,619	524	2,516	0	0	367	543
Total	809,792	208,352	164,480	84,614	78,187	73,329	72,442	67,780	56,740	3,838

^{1/} Includes blue and white spruce.^{2/} Includes grand, white, subalpine, and corkbark firs.^{3/} Includes a small amount of limber and whitebark pines.^{4/} Includes principally western redcedar, western hemlock, pinyon pine, and juniper.^{5/} Less than 0.5 MCF.

Table 28.—Output of roundwood products from timberlands of the Rocky Mountain States by land ownership class and State, 1966

State	Land ownership classes			All ownerships
	National Forest	Other public	Forest industry	
- - - - Thousand cubic feet - - - -				
Idaho	173,318	36,304	70,578	316,188
Montana	141,431	29,108	39,331	238,231
W. South Dakota	13,221	1,036	1,057	545
Wyoming	31,023	1,145	--	1,355
Arizona	67,197	21,477	1,060	139
Colorado	46,198	2,420	263	50,873
Nevada	43	77	--	103
New Mexico	26,152	3,023	7,074	34,230
Utah	12,617	576	(1/)	837
Total	511,200	88,166	119,363	91,063
Percent	63.12	10.39	14.74	11.24
				100.00

1/
less than 0.5 MCF.

Table 29.—Number and log receipts¹ of active sawmills in the Rocky Mountain States, by mill size class² and State, 1966

State	All mills			Small mills			Medium mills			Large mills			
	Number	Average per mill	Receipts	Number	Volume of total:	Percent of total:	Average per mill	Number	Volume of total:	Percent of total:	Average per mill	Number	Volume of total:
		MBF	MBF		MBF		MBF		MBF		MBF		MBF
Idaho	168	9,681	77	18,033	1	234	46	184,727	11	4,016	45	1,423,712	88
Montana	148	8,477	86	49,370	4	574	25	80,680	6	3,227	37	1,124,558	90
W. South Dakota	21	2,097	14	3,868	9	276	5	10,820	24	2,164	2	29,344	67
Wyoming	65	2,575	42	9,287	5	221	19	80,024	48	4,212	4	78,057	47
Arizona	23	17,205	5	1,366	(3/)	273	8	41,336	11	5,167	10	353,002	89
Colorado	116	2,367	74	25,731	9	348	35	120,926	44	3,456	7	127,880	47
Nevada	2	22,217	0	0	0	0	1	4,022	9	4,022	1	40,412	91
New Mexico	64	4,107	41	13,343	5	325	17	87,866	33	5,169	6	161,617	62
Utah	50	1,555	37	7,658	10	206	11	27,281	35	2,480	2	42,842	55
Mountain States	657	6,313	376	128,636	3	342	167	637,712	15	3,819	114	3,381,424	82
												21,121	29,662

¹/ International 1/4-inch log rule.

²/ Small mill: less than 1 MMBF per year; medium: 1 to 10 MMBF; large: more than 10 MMBF per year.

³/ Less than 0.5 percent.

Table 30.—*Estimated volume of plant residues¹ in the Rocky Mountain States, by industrial source, type of material, and State, 1966*

State	All industries			Lumber industry			Veneer and plywood industry			Other primary industries			
	Total		Coarse ^{2/}	Fine ^{3/}	Total	Coarse ^{2/}	Fine ^{3/}	Total	Coarse ^{2/}	Fine ^{3/}	Total	Coarse ^{2/}	Fine ^{3/}
	Thousand cubic feet												
Idaho	56,383	23,245	33,138	55,495	22,808	32,687	122	122	0	766	315	451	
Montana	38,011	12,653	25,358	36,924	11,858	25,066	657	657	0	430	138	292	
W. South Dakota	2,224	741	1,483	2,062	687	1,375	0	0	0	162	54	108	
Wyoming	11,943	5,933	6,010	10,743	5,337	5,406	0	0	0	1,200	596	604	
Arizona	13,235	4,741	8,494	13,160	4,714	8,446	0	0	0	75	27	48	
Colorado	19,866	10,622	9,244	18,006	9,022	8,984	1,339	1,339	0	521	261	260	
Nevada	1,832	472	1,360	1,832	472	1,360	0	0	0	0	0	0	
New Mexico	15,913	5,870	10,043	15,913	5,870	10,043	0	0	0	0	0	0	
Utah	6,050	3,048	3,002	5,742	2,893	2,849	0	0	0	308	155	153	
Total	165,457	67,325	98,132	159,877	63,661	96,216	2,118	2,118	0	3,462	1,546	1,916	

^{1/} Unused plant residues at primary manufacturing plants; i.e., do not include primary plant waste that is subsequently used for fuel or fiber (pulp or particle board).

^{2/} Unused material suitable for chipping, such as slabs, edgings, veneer cores, and trimmings.

^{3/} Unused material such as sawdust and shavings.

Table 31.—Output of plant byproducts in the Rocky Mountain States by industrial source, type of material, and State, 1966

State	All industries ^{1/}			Lumber industry			Veneer and plywood industry								
	Total	Fiber ^{2/}	Industrial: Domestic: Other ^{3/}	Total	Fiber ^{2/}	Industrial: Domestic: Other ^{3/}	Total	Fiber ^{2/}	Industrial: Domestic: Other ^{3/}						
		: fuel			: fuel	: fuel		: fuel							
- - - - Thousand cubic feet - - - -															
Idaho	92,167	53,281	28,501	512	9,873	79,002	42,333	28,361	496	7,812	13,165	10,948	140	16	2,061
Montana	73,494	42,212	26,622	997	3,663	64,705	34,012	26,394	696	3,603	8,789	8,200	228	301	60
W. South Dakota	1,533	811	558	48	116	1,533	811	558	48	116	0	0	0	0	0
Wyoming	3,313	2,928	165	137	83	3,313	2,928	165	137	83	0	0	0	0	0
Arizona	19,309	10,863	8,261	36	149	19,309	10,863	8,261	36	149	0	0	0	0	0
Colorado	2,499	231	596	194	1,478	2,143	231	596	194	1,122	356	0	0	0	356
Nevada	1,772	788	984	0	0	1,772	788	984	0	0	0	0	0	0	0
New Mexico	6,120	4,501	1,314	68	237	6,120	4,501	1,314	68	237	0	0	0	0	0
Utah	535	0	12	54	469	535	0	12	54	469	0	0	0	0	0
Total	200,742	115,615	67,013	2,046	16,068	178,432	96,467	66,645	1,729	13,591	22,310	19,148	368	317	2,477

^{1/}The lumber, veneer, and plywood industries are the only ones with significant plant byproducts.

^{2/}Mainly chips and sawdust used for pulpwood.

^{3/}Includes livestock bedding, mulch, and small dimension and speciality items.

Table 32.—*Removals from growing stock in the Rocky Mountain States by roundwood products, logging residues, and other means, by State, 1966*

State	Total removals	Products						Logging residues	Other removals
		All products	Saw logs	Veneer logs	Pulpwood	Commercial poles	Mine timbers		
Thousand cubic feet									
Idaho	338,508	301,930	249,414	39,236	7,536	3,571	1,2	595	1,436
Montana	270,555	233,369	193,647	27,884	3,148	2/ 2,472	2,974	2,996	36,860
W. South Dakota	15,775	14,923	6,912	0	4,645	--	1	--	3/ 3,365
Wyoming	35,980	32,596	26,524	0	112	2/ 3,616	478	27	1,839
Arizona	81,198	71,032	61,813	0	6,647	33,	12	73	2,145
Colorado	56,404	49,432	38,942	5,005	201	837	2,574	593	1,280
Nevada	76	76	2	0	0	0	--	--	74
New Mexico	49,320	42,849	41,505	0	--	0	236	--	1,108
Utah	15,484	13,146	11,644	0	0	--	445	706	3/ 341
Total	863,300	759,353	630,403	72,125	23,289	10,834	6,380	2,242	14,484
									9,108

1/ Includes house logs, converter poles, shingle bolts, excelsior bolts, match stock, charcoal wood, and similar items.

2/ Includes a small amount of piling.

3/ Includes a small volume of commercial poles to avoid disclosure of individual operations.

4/ Less than 0.5 MCF.

Table 33.—*Removals from sawtimber in the Rocky Mountain States by roundwood products, logging residues, and other means, by State, 1966*

State	Products									
	Total removals	All products	Saw logs	Veneer logs	Pulpwood	Commercial poles	Mine timbers	Miscellaneous wood/ wood/	Posts, fuelwood industrial residues farm timbers	Logging residues removals
Thousand board feet, International 1/4-inch log rule										
Idaho	1,974,434	1,859,405	1,532,400	251,110	45,337	22,169	909	2,900	4,580	111,682
Montana	1,571,247	1,452,535	1,214,554	178,458	15,916	2/15,663	19,034	1,407	3/7,503	116,679
W. South Dakota	94,772	92,094	43,794	0	28,242	--	6	--	3/20,052	2,162
Wyoming	207,311	195,920	161,266	0	387	2/22,911	3,059	164	8,133	7,374
Arizona	483,775	443,436	391,647	0	42,115	2,104	141	418	7,011	23,755
Colorado	339,114	310,425	244,244	32,930	1,274	5,250	16,474	3,776	6,477	12,204
Nevada	34	33	11	0	0	0	--	--	22	1 (4/)
New Mexico	289,866	265,592	257,663	0	--	0	1,510	--	6,419	15,908
Utah	84,632	75,319	70,796	0	0	--	2,912	1,417	3/194	4,433
Total	5,045,185	4,694,759	3,916,375	462,498	133,271	68,097	44,045	10,082	60,391	294,198
										56,228

^{1/} Includes house logs, converter poles, shingle bolts, excelsior bolts, match stock, charcoal wood, and similar items.^{2/} Includes a small amount of piling.^{3/} Includes a small volume of commercial poles to avoid disclosure of individual operations.^{4/} Less than 0.5 MBF.

Table 34.—*Log imports to sawmills and plywood plants¹ in the Rocky Mountain States, by State, 1966*

Receiving State	State of origin	Volume - Thousand board feet ² - -
Idaho	Montana	40,035
	Washington	29,208
	Wyoming	123
Montana	Idaho	109,336
	Wyoming	67
W. South Dakota	Wyoming	9,968
Wyoming	Idaho	2,980
	Montana	1,469
	W. South Dakota	10,248
	Utah	1,512
Arizona ^{3/}	0	0
Colorado	New Mexico	14,442
	Wyoming	8,024
Nevada	California	44,434
New Mexico	Arizona	4,554
Utah	Nevada	11
Washington	Idaho	2,800

^{1/} Idaho and Montana are the only states reported as importing veneer logs.

^{2/} International 1/4-inch log rule.

^{3/} No log imports were reported in Arizona.

IDAHO

Table 35.—Mill receipts of saw logs from Idaho timberlands by species and county of origin, 1966

County	Species										
	: True fir ^{1/}	: Western larch ^{2/}	: Engelmann spruce ^{3/}	: Lodgepole pine ^{4/}	: Western white pine ^{2/}	: Ponderosa pine ^{2/}	: Douglas-fir ^{2/}	: Western hemlock ^{2/}	: Aspen ^{2/}	: Cottonwood ^{2/}	: Volume : Percent
— Thousand board feet, International 1/4-inch log rule ^{3/} —											
Adams	10,289	781	3,748	869	--	43,315	22,634	--	--	--	81,636 4.9
Bear Lake, Franklin, Oneida	115	--	230	40	--	--	389	--	144	28	946 .1
Benewah	14,030	6,979	785	328	5,628	1,062	9,421	1,622	319	--	40,174 2.4
Blaine	94	--	63	56	--	--	4,569	--	--	29	4,811 .3
Boise	3,203	--	134	127	--	85,428	22,865	--	--	--	111,757 6.7
Bonne	17,239	12,587	5,598	394	22,211	3,009	18,368	4,679	8,312	29	92,426 5.5
Boundary	8,771	7,499	12,394	198	9,835	713	6,890	9,169	3,333	--	58,802 3.5
Camas	81	--	41	41	--	--	4,462	--	--	--	4,625 .3
Caribou	104	--	--	196	--	--	1,621	--	--	--	1,921 .1
Cassia, Power, Twin Falls	251	--	96	130	--	--	9,311	--	--	--	9,788 .6
Clearwater	109,871	33,906	12,328	211	177,402	25,520	77,601	52,832	4,461	--	494,132 29.7
Custer	3	--	151	55	--	--	5,144	--	--	--	5,353 .3
Elmore	113	--	31	26	--	17,105	6,894	--	--	--	24,169 1.5
Fremont	--	--	--	18,258	--	45	3,383	--	--	--	21,709 1.3
Gem	450	--	16	8	--	369	156	--	--	--	999 .1
Idaho	54,024	18,848	21,058	3,762	6,690	39,260	52,075	9,857	--	--	205,574 12.3
Kootenai	29,249	16,296	861	172	15,724	7,821	19,279	2,270	6,898	--	98,570 5.9
Latah	9,908	2,751	26	24	4,383	2,961	7,213	2,248	11	--	29,525 1.8
Lemhi	--	--	1,467	--	--	15,133	20,112	--	--	--	36,712 2.2
Lewis	841	--	--	--	--	3,883	1,188	--	--	--	5,912 .3
Madison	--	--	--	6,123	--	--	--	--	--	--	6,123 .4
Nez Perce	460	--	--	--	--	146	579	--	--	--	1,185 .1
Shoshone	60,187	25,850	8,669	1,817	58,094	3,814	39,319	12,272	11,017	--	221,839 13.3
Teton	--	--	--	3,067	11	--	33	--	--	--	3,111 .2
Valley	14,257	668	13,563	1,473	--	30,273	25,336	--	--	--	85,570 5.1
Washington	2,101	134	257	68	--	7,884	7,612	--	--	--	18,056 1.1
Total	335,641	126,299	81,516	37,443	299,978	287,741	366,454	94,949	35,151	144	1,665,425 100.0
Percent of total	20.2	7.6	4.9	2.2	18.0	17.3	22.0	5.7	2.1	(<u>1/</u>)	(<u>1/</u>) 100.0

^{1/} Includes grand, white, and subalpine firs.

^{2/} Includes limber and whitebark pines.

^{3/} Scribner log rule volumes can be approximated by multiplying table volumes by 0.89.

^{4/} Less than 0.05 percent.

Table 36.—Mill receipts of veneer logs from Idaho timberlands by species and county of origin, 1966

County	Species						All species Volume : Percent
	True firs ^{1/}	Western larch	Engelmann spruce	Western white pine	Ponderosa pine	Douglas- fir	
Thousand board feet, International 1/4-inch log rule ^{3/}							—
Adams	1,069	61	400	—	176	2,031	—
Benewah	2,960	1,072	—	409	626	2,345	28
Boise, Gem	498	—	—	—	327	2,793	—
Bonner	—	14	—	19	192	8	—
Boundary	—	—	—	4	40	2	—
Clearwater	36,917	7,077	797	84,160	—	5,827	5
Elmore	—	—	—	—	20	169	—
Idaho	106	25,000	1,980	—	—	25,084	—
Kootenai	2,787	2,803	269	2,632	2,812	395	6,07
Latah	1,949	981	—	—	11	1,918	—
Shoshone	6,695	5,447	280	551	199	4,951	1,053
Valley	1,888	87	1,790	—	131	3,385	—
Total	54,869	42,542	16,516	87,775	4,630	48,908	1,737
Percent of total	21.3	16.5	6.4	34.0	1.8	18.9	.7
							.4

^{1/} Includes grand, white, and subalpine firs.

^{2/} Includes a small amount of birch.

^{3/} Scribner log rule volumes can be approximated by multiplying table volumes by 0.89.

^{4/} Less than 0.05 percent.

Table 37.—*Mill receipts of round pulpwood from Idaho timberlands by species and county of origin, 1966*

County	True fir ^{1/}	Western larch	Engelmann spruce	Lodgepole pine	Western white pine	Ponderosa pine	Douglas- fir	Western hemlock	Species		All species
									Cottonwood	Cordwood	
Standard cords											
Bonneville	3,364	--	4	366	--	--	--	--	1,749	328	5,811
Blaine	--	--	--	--	--	--	--	--	--	--	--
Bonner	589	--	6,422	8,424	--	--	--	--	20,275	525	36,235
Boundary	71	--	771	--	--	--	--	--	2,146	14	3,023
Clark	--	--	--	--	--	--	--	--	--	--	--
Clearwater	8,944	2,327	1,132	21,387	4,295	6,977	--	--	--	45,062	42.3
Custer	--	--	--	--	--	--	--	--	--	--	--
Fremont	--	--	--	--	--	--	--	--	--	--	--
Idaho	--	--	--	--	--	--	--	--	--	--	--
Kootenai	176	--	1,380	7,217	--	--	--	--	5,045	696	14,514
Latah	--	--	--	--	--	--	--	--	--	--	--
Lewis	--	--	--	--	--	--	--	--	--	--	--
Nez Perce	--	--	--	--	--	--	--	--	--	--	--
Shoshone	618	--	--	1,028	--	--	--	--	361	--	2,007
Teton	--	--	--	--	--	--	--	--	--	--	--
Twin Falls	--	--	--	--	--	--	--	--	--	--	--
Valley	--	--	--	--	--	--	--	--	--	--	--
Total	13,762	2,327	9,709	17,056	21,387	4,295	6,977	29,576	1,563	106,652	100.0
Percent of total	12.9	2.2	9.1	16.0	20.1	4.0	6.5	27.7	1.5	100.0	

^{1/} Includes grand, white, and subalpine firs.

Table 38.—Output of roundwood products from Idaho timberlands by species and product, 1966

Product	Species						Percent
	True firs ^{1/}	Western larch	Engelmann spruce	Lodgepole pine	Western whitepine ^{2/}	Douglas-fir	
All species							
Thousands cubic feet							
Saw logs	52,360	19,703	12,716	5,841	46,797	44,837	17,167
Veneer logs	8,340	6,466	2,510	0	13,342	7,434	264
Pulpwood	1,184	200	833	1,467	1,839	369	6(0)
Commercial poles	0	74	0	484	0	0	3,013
Mine timbers	—	29	—	38	—	(h/)	75
Miscellaneous industrial wood ^{5/}	0	1	0	3	0	0	—
Posts, fuelwood, miscellaneous farm timbers	13	137	—	111	—	52	678
Total	61,897	26,610	16,061	9,964	61,978	46,017	6(4), 9(4)
Percent of total	19.6	8.4	5.1	3.1	10.6	14.5	5.9
							6.1
							5.7
							100.0

^{1/} Includes white, grand, and subalpine firs.^{2/} Includes a small amount of limber and whitebark pines.^{3/} Includes western hemlock, juniper, aspen, and cottonwood.^{4/} Less than 0.5 MCF.^{5/} Includes house logs, shingle logs, picket stock, rails, cedar poles, and similar timbers.

Table 39.—Output of roundwood products from Idaho timberlands by land ownership class and product, 1966

Product	Total volume	Land ownership classes	Percent			
			National Forest	Other public	Industry ^{1/}	Other private
- MCF -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
Saw logs	259,806	48.7	10.3	14.5	8.7	82.2
Veneer logs	39,236	4.1	.8	5.6	1.9	12.4
Pulpwood	9,172	.7	.2	1.5	.5	2.9
Commercial poles	3,571	.3	.1	.5	.2	1.1
Mine timbers	142	.1	(2/)	(2/)	(2/)	.1
Miscellaneous industrial wood ^{3/}	751	.1	(2/)	.1	(2/)	.2
Posts, fuelwood, miscellaneous farm timbers	3,510	.8	.1	.1	.1	1.1
Total	316,188	54.8	11.5	22.3	11.4	100.0

^{1/}Lands owned by companies or individuals operating wood-using plants.

^{2/}Less than 0.05 percent.

^{3/}Includes house logs, shingle bolts, picket stock, rails, cellar poles, and similar items.

MONTANA

Table 40.—Mill receipts of saw logs from Montana timberlands by species and county of origin, 1966

County	Species						All species				
	: True firs ^{1/}	: Western larch	: Engelmann spruce	: Lodgepole pine	: Western white pine ^{2/}	: Ponderosa pine	Douglas-fir	Western hemlock	Cottonwood	Volume	Percent
- - - - - Thousand board feet, International 1/4-inch log rule ^{3/} - - - - -											
Beaverhead	629	--	3,659	23,815	--	371	8,755			37,229	3.0
Big Horn, Powder River,	--	--	--	--	841	--				841	.1
Rosebud	--	--	--	1,824	--	--	2,614			4,438	.4
Broadwater	--	--	--	--	--	--	580			580	(4/)
Carbon	--	--	--	58	--	--	539			597	(4/)
Choteau, Judith Basin	--	--	--	--	3,479	--	--			3,479	.3
Deer Lodge	--	--	--	--	1,722	--	--			7,009	.6
Fergus	--	--	--	--	4,967	13,653	4,922			166,507	13.3
Flathead	3,155	30,052	46,849	10,155	--	139	57,057			50,445	4.4
Gallatin	33	--	2,205	26,666	--	--	21,541			55,745	.5
Glacier	355	--	3,820	1,498	--	--	712			27,919	2.2
Granite	664	488	1,043	11,245	579	585	13,315			324	(4/)
Jefferson, Madison	--	--	--	--	--	--	323			93,463	7.5
Lake	4,760	14,672	17,772	1,968	2,721	21,547	29,868	155		23,178	1.8
Lewis & Clark	51	--	679	1,787	--	2,349	18,312			307,604	24.5
Lincoln	14,938	93,338	33,303	23,165	16,397	48,727	65,278	8,496	3,903	59	27,089
Meagher	--	--	--	7,654	--	--	19,435			53,632	4.3
Mineral	1,464	9,565	4,861	2,055	3,145	20,832	11,462	62	186	149,149	11.9
Missoula	1,434	31,157	11,800	9,113	52	36,293	58,700			525	(4/)
Musselshell	--	--	--	--	--	525	--			24,316	1.9
Park	--	--	615	14,957	--	--	8,744			35,149	2.8
Powell	2,088	2,007	--	3,649	232	5,631	21,542			80,417	6.4
Ravalli	1,160	--	3,330	1,400	--	29,223	45,304			153,382	12.2
Sanders	5,264	27,986	10,447	8,815	7,926	48,672	43,333	473	1,366		
Sweet Grass	--	--	--	--	--	189	662			851	.1
Total	35,995	209,865	140,441	154,968	35,119	229,803	432,358	5,669	325	1,253,868	100.0
Percent of total	2.9	16.7	11.2	12.4	2.8	18.3	34.5	.7	.5	(4/)	100.0

^{1/} Includes grand, white, and subalpine firs.

^{2/} Includes limber and whitebark pines.

^{3/} Scribner log rule volumes can be approximated by multiplying table volumes by 0.89.

^{4/} Less than 0.05 percent.

Table 41.—Mill receipts of veneer logs from Montana timberlands by species and county of origin, 1966

County	Species						All species				
	True firs ^{1/}	Western firs	Engelmann spruce	Lodgepole pine	Western white pine	Ponderosa pine	Douglas-fir	Western redcedar ^{2/}	Cottonwood	Volume	Percent
Thousand board feet, International 1/4-inch log rule ^{3/}											
Flathead	979	16,850	13,604	941	902	10	28,969	--	119	62,374	34.0
Lake	11	3,266	2,035	29	--	--	6,255	--	85	11,681	6.4
Lincoln	147	23,867	1,653	68	--	65	9,244	1	113	35,158	19.2
Mineral	--	2,000	--	--	--	1,750	--	--	3,750	2.0	
Missoula	20	23,379	8,344	12	--	--	21,952	32	454	54,193	29.5
Sanders	122	5,652	1,843	49	2	119	7,823	309	374	16,293	8.9
Total	1,279	75,014	27,479	1,099	904	194	75,993	342	1,145	183,449	100.0
Percent of total	.7	40.9	15.0	.6	.5	.1	41.4	.2	.6	100.0	

^{1/} Includes grand, white, and subalpine firs.^{2/} Includes a small amount of western hemlock.^{3/} Scribner log rule volumes can be approximated by multiplying table volumes by 0.89.

Table 42.—*Mill receipts of round pulpwood from Montana timberlands by species and county of origin, 1966*

County	Species			All species	
	: True ^{1/}	: Engelmann spruce	: Lodgepole pine	: Western hemlock	: Cords
-- Standard cords -- -- -- -- --					
Gallatin	428	1,149	35,715	---	37,292
Lincoln	--	--	3,033	3,320	6,353
Total	428	1,149	38,748	3,320	43,645
Percent of total	1.0	2.6	88.8	7.6	100.0

^{1/} Includes grand, white, and subalpine firs.

Table 43.—Output of roundwood products from Montana timberlands by species and product, 1966

Product	Species						Percent
	: True firs ^{1/}	: Western larch	: Engelmann spruce	: Lodgepole pine	: Western white pine	: Ponderosa pine	
	Thousands cubic feet						
Saw logs	5,615	32,739	21,909	24,175	5,478	35,849	67,148
Veneer logs	195	11,402	4,177	167	137	29	11,551
Pulpwood	37	--	99	3,332	--	--	52
Commercial poles ^{2/}	0	0	0	2,046	0	73	0
Mine timbers	18	1,463	--	9	--	4	1,480
Miscellaneous industrial wood ^{3/}	0	0	0	42	187	27	--
Posts, fuelwood, miscellaneous farm timbers	--	228	14	2,616	--	159	252
Total	5,865	45,832	26,149	32,387	5,802	36,141	80,731
Percent of total	2.5	19.2	1.0	13.6	2.4	15.2	33.9
							.8
							1.4
							100.0

^{1/}Includes grand, white, and subalpine firs.

^{2/}Includes a small amount of limber and whitebark pines.

^{3/}Includes western hemlock, juniper, pinyon pine, and cottonwood.

^{4/}Includes a small volume of piling.

^{5/}Includes house logs, converter poles, and similar items.

Table 44.—Output of roundwood products from Montana timberlands by land ownership class and product, 1966

Product	:	Total volume :	National Forest :	Other public :	Land ownership classes		
					Forest industry	^{1/} private	All ownerships
- MCF - - - - - Percent - - - - -							
Saw logs	:	195,603	48.4	9.0	13.6	11.1	82.1
Veneer logs	:	27,884	7.9	.2	1.4	2.2	11.7
Pulpwood	:	3,753	1.6	--	--	(2/)	1.6
Commercial poles ^{3/}	:	2,472	.7	(2/)	.1	.2	1.0
Mine timbers	:	2,974	(2/)	--	1.3	(2/)	1.3
Miscellaneous industrial wood ^{4/}	:	256	(2/)	0	(2/)	.1	.1
Posts, fuelwood, miscellaneous farm timbers	:	5,289	.8	(2/)	.1	1.3	2.2
Total		238,231	59.4	9.2	16.5	14.9	100.0

^{1/} Lands owned by companies or individuals operating wood-using plants.

^{2/} Less than 0.05 percent.

^{3/} Includes a small amount of piling.

^{4/} Includes house logs, converter poles, and similar items.

WESTERN SOUTH DAKOTA

Table 45.—Mill receipts of saw logs from western South Dakota timberlands by species and county of origin, 1966

	Species	All species
County	: White	Ponderosa
	: spruce	: pine
Custer	--	15,015
Lawrence	5	9,213
Meade	--	5,258
Pennington	--	14,817
Total	5	44,303

^{1/} Thousand board feet ^{1/} -- --

^{1/} International 1/4-inch log rule. Scribner log rule volumes can be approximated by multiplying table volumes by 0.89.

Table 46.—Output of roundwood products from western South Dakota timberlands by species and product, 1966

	Species	All species
Product	: White	Ponderosa
	: spruce	: pine
Saw logs	1	6,911
Pulpwood	411	4,234
Mine timbers	--	1
Posts, fuelwood, miscellaneous farm timbers ^{2/}	--	1
Total	412	15,447
Percent of total	2.6	97.4

^{1/} Thousand cubic feet ^{1/} -- --

^{2/} Includes volume of commercial poles.

Table 47.—Output of roundwood products from western South Dakota timberlands by land ownership class and product, 1966

Product	Total volume	MCF	Land ownership classes			Percent of ownerships
			National Forest	Other public	Forest 1/ industry 1/ private	
Saw logs	6,912	36.5	3.3	3.6	.2	43.6
Pulpwood	4,645	24.6	2.2	2.4	.1	29.3
Mine timbers	1	--	--	--	(2/)	(2/)
Posts, fuelwood, miscellaneous farm timbers 3/	4,301	22.3	1.1	.6	3.1	27.1
Total	15,859	83.4	6.6	6.6	3.4	100.0

1/ Lands owned by companies or individuals operating wood-using plants.

2/ Less than 0.05 percent.

3/ Includes volume of commercial poles.

WYOMING

Table 48.—Mill receipts of saw logs from Wyoming timberlands by species and county of origin, 1966

County	True firs ^{1/}	Engelmann spruce ^{2/}	Lodgepole pine ^{3/}	Ponderosa pine ^{4/}	Species		Douglas-fir ^{5/}	Volume	Percent	All species
					Thousand board feet, International 1/4-inch log rule ^{3/}	1,464				
Albany	35	624	12,011				--	14,134	8.1	
Big Horn	--	1,357	4,377				--	5,734	3.3	
Carbon	460	9,069	20,281				--	29,810	17.2	
Converse, Weston	--	--	--				81		(4/)	
Crook	--	--	--				--	23,413	13.5	
Fremont	697	2,159	23,406				--	917	27,179	15.7
Hot Springs	--	967	968				--	691	2,626	1.5
Johnson	--	--	5,533				--	399	5,932	3.4
Lincoln	2,582	7,771	9,703				--	3,719	23,775	13.7
Park	--	269	54				--	200	523	.3
Sheridan	--	--	9,885				--		9,885	5.7
Sublette	--	5,528	2,280				--		7,808	4.5
Teton	105	1,389	20,367				--	448	22,309	12.9
Washakie	--	6	138				69	69	282	.2
Total	3,879	29,139	109,003				25,027	6,443	173,491	100.0
Percent of total	2.3	16.8	62.8				14.4	3.7	100.0	

^{1/} Includes white and subalpine firs.

^{2/} Includes white spruce.

^{3/} Scribner log rule volumes can be approximated by multiplying table volumes by 0.89.

^{4/} Less than 0.05 percent.

Table 49.—Output of roundwood products from Wyoming timberlands by species and product, 1966

Product	Species			All species		
	: True firs ^{1/}	: Engelmann spruce ^{2/}	: Lodgepole pine ^{2/}	: Ponderosa pine ^{2/}	: Douglas-fir ^{3/}	: Other species ^{3/}
- - - - - Thousand cubic feet - - - - -						
Saw logs						
Pulpwood	605	11,546	17,005	3,904	1,005	--
Commercial poles ^{4/}	--	--	1h1	--	--	--
Mine timbers	0	0	622	2,994	0	0
(<u>5/</u>)	(<u>19</u>)	(<u>57</u>)	(<u>57</u>)	(<u>57</u>)	(<u>57</u>)	(<u>57</u>)
Miscellaneous industrial wood ^{6/}	--	--	28	--	--	28
Posts, fuelwood, miscellaneous farm timbers	--	--	--	1,889	25	71
Total	605	4,965	19,742	6,995	1,076	140
Percent of total	1.8	14.8	58.0	30.9	3.2	.4

^{1/} Includes white and subalpine firs.^{2/} Includes white spruce.^{3/} Includes juniper and aspen.

Table 50.—Output of roundwood products from Wyoming timberlands by land ownership class and product, 1966

Product	Total			Land ownership classes		
	Volume	National Forest	Other	Private	All	Ownership
		Forest	Public	Private	Ownership	
- MCF - - - - - Percent - - - - -						
Saw logs	11,546	77.7	1.6	1.6	1.6	80.4
Pulpwood	1h1	.4	--	--	--	.4
Commercial poles ^{2/}	3,016	6.7	1.5	1.6	1.6	10.8
Mine timbers	678	1.6	--	--	--	1.4
Miscellaneous industrial wood ^{3/}	58	.1	.1	.1	.1	.1
Posts, fuelwood, miscellaneous farm timbers	1,195	0.3	.1	.3	.3	0.6
Total	33,433	97.4	3.4	4.1	4.1	100.0

^{1/} No receipts were reported from forest industry lands; i.e., lands owned by companies or individuals operating wood-using plants.^{2/} Includes a small volume of pilings.^{3/} Includes house log and similar items.

ARIZONA

Table 51.—Output of roundwood products from Arizona timberlands by land ownership class and product, 1966

Product	Total volume	Land ownership classes				Percent
		National Forest	Other public	Industry ^{1/}	Other private	
Saw logs	62,437	51.1	17.6	.8	—	69.5
Pulpwood	6,647	6.7	.6	0	.1	7.4
Commercial poles	335	.3	0	.1	0	.4
Mine timbers	22	(2/)	—	—	—	(2/)
Miscellaneous industrial wood ^{2/}	86	.1	0	0	(2/)	.1
Posts, fuelwood, miscellaneous farm timbers	20,346	16.6	5.7	.3	—	22.6
Total	89,873	74.8	23.9	1.2	.1	100.0

^{1/} Lands owned by companies or individuals operating wood-using plants.

^{2/} Less than 0.05 percent.

^{3/} Includes house logs, converter poles, excelsior bolts, and similar items.

Table 52.—Output of roundwood products from Arizona timberlands by species and product, 1966

Product	Species					All species	
	: True firs ^{1/}	: Engelmann spruce ^{2/}	: Ponderosa pine	: Douglas- fir ^{3/}	: Other species ^{4/}	: Volume	: Percent
Thousand cubic feet							
Saw logs	3,816	693	51,380	6,442	106	62,437	69.5
Pulpwood	--	--	6,647	--	--	6,647	7.4
Commercial poles	0	0	335	0	0	335	.4
Mine timbers	--	--	(3/)	--	22	22	(4/)
Miscellaneous industrial wood ^{5/}	0	0	8	0	78	86.	.1
Posts, fuelwood, miscellaneous farm timbers	--	--	4,002	--	16,344	20,346	22.6
Total	3,816	693	62,372	6,442	16,550	89,873	100.0
Percent of total	4.2	.8	69.4	7.2	18.4	100.0	

^{1/} Includes white, subalpine, and corkbark firs.

^{2/} Includes juniper, pinyon pine, and aspen.

^{3/} Less than 0.5 MCF.

^{4/} Less than 0.05 percent.

^{5/} Includes house logs, converter poles, excelsior bolts, and similar items.

Table 53.—Mill receipts of saw logs from Arizona timberlands by species and county of origin, 1966

County	Species						All species	
	True ^{1/} firs	Engelmann spruce	White pine ^{2/}	Ponderosa pine	Douglas- fir	Aspen	Volume	Percent
- - - - - Thousand board feet, International 1/4-inch log rule ^{3/} - - - - -								
Apache	11,490	1,638	--	100,406	27,007	--	140,541	35.1
Coconino	10,278	2,718	--	142,692	9,714	--	165,402	41.3
Gila	2,271	--	--	23,265	3,032	--	28,568	7.2
Graham, Greenlee	--	--	--	12,393	--	--	12,393	3.1
Mohave, Pima, Yavapai	4	--	6	1,963	28	--	2,001	.5
Navajo	417	84	3	48,640	1,515	672	51,331	12.8
Total	24,460	4,440	9	329,359	41,296	672	400,236	100.0
Percent of total	6.1	1.1	(4/)	82.3	10.3	.2	100.0	

^{1/} Includes white, subalpine, and corkbark firs.^{2/} Mexican white pine (*Pinus flexilis* var. *reflexa* Engelmann).^{3/} Scribner log rule volumes can be approximated by multiplying table volumes by 0.89.^{4/} Less than 0.05 percent.

Table 54.—Mill receipts of saw logs from Colorado timberlands by species and county of origin, 1966

County	Species						All Species		
	True firs ^{1/}	Engelmann spruce ^{2/}	Lodgepole pine	Ponderosa pine ^{3/}	Douglas-fir	Aspen	Cottonwood	Volume	Percent
- - - - - Thousand board feet, International 1/4-inch log rule ^{4/} - - - - -									
Archuleta	860	1,327	--	6,034	209	247	--	8,677	3.4
Chaffee	--	155	51	103	129	--	--	438	.2
Conejos	935	5,263	--	325	1,928	--	--	8,451	3.4
Custer, Huerfano	357	7,661	--	1,850	260	--	--	10,128	4.0
Delta	3	2,782	--	--	--	174	--	2,959	1.2
Dolores	--	260	--	3,857	--	--	--	4,117	1.6
Douglas	--	--	--	3,367	1,419	--	--	4,786	1.9
Eagle	467	4,375	1,500	--	--	--	--	6,342	2.5
El Paso, Pueblo, Teller	32	5	--	1,188	65	--	--	2,183	.9
Garfield	32	766	--	--	--	--	--	798	.3
Grand	--	6,625	5,354	--	--	--	--	11,979	4.7
Gunnison	548	12,703	83	--	188	2,191	--	15,713	6.2
Hinsdale	3,032	15,928	--	4,921	1,230	6	--	25,117	10.0
Jackson	38	5,893	11,771	--	--	--	--	17,702	7.0
Jefferson	--	--	--	779	260	--	--	1,039	.4
Lake	--	110	38	--	--	--	--	148	.1
La Plata	1,455	16,783	--	854	240	32	2	19,366	7.7
Larimer	--	10,778	7,573	337	44	--	--	18,732	7.4
Las Animas	--	--	--	713	26	51	21	811	.3
Mesa	--	141	--	1,544	--	--	--	1,685	.7
Mineral	5,806	18,529	--	4,918	905	--	--	30,158	12.0
Moffat, Routt	1,243	18,992	6,389	--	--	--	--	26,224	10.4
Montezuma	--	2,450	--	130	--	2,008	--	4,588	1.8
Montrose	114	4,403	--	4,660	349	--	--	9,526	3.8
Ouray	34	2,563	--	38	3	28	--	2,666	1.0
Park	--	3,522	1,818	188	--	--	--	5,528	2.2
Pitkin	390	2,089	--	--	--	--	--	2,479	1.0
Rio Grande	41	2,163	--	--	--	--	--	2,204	.9
Saguache	612	6,277	36	116	168	--	--	7,209	2.9
San Miguel	--	--	--	--	--	392	--	392	.1
Total	15,999	152,143	34,613	35,922	7,423	5,129	916	252,145	100.0
Percent of total	6.4	60.3	13.7	14.3	2.9	2.4	.4	100.0	

^{1/} Includes white, subalpine, and corkbark firs.^{2/} Includes blue spruce.^{3/} Includes limber pine.^{4/} Scribner log rule volumes can be approximated by multiplying table volumes by 0.89.

Table 55.—*Mill receipts of veneer¹ logs from Colorado timberlands by species and county of origin, 1966*

County	Species			All species	
	True ^{2/} firs	Engelmann spruce ^{3/}	Ponderosa pine	Aspen	Volume Percent
— Thousand board feet, International 1/4-inch log rule ^{4/} —					
Dolores	1,500	6,276	13,549	0	21,325
Montezuma	1,911	8,525	1,077	92	11,605
Total	3,411	14,801	14,626	92	32,930
Percent of total	10.4	44.9	44.4	.3	100.0

^{1/}Veneer logs used in Colorado are of average saw-log quality.

^{2/}Includes white, subalpine, and corkbark firs.

^{3/}Includes blue spruce.

^{4/}Scribner log rule volumes can be approximated by multiplying table volumes by 0.89.

Table 56.—Output of roundwood products from Colorado timberlands by species and product, 1966

Product	Species					All species Percent
	True firs ^{1/}	Engelmann spruce ^{2/}	Lodgepole pine	Ponderosa pine	Douglas- fir	
	Thousand cubic feet					
Saw logs	2,496	23,734	5,400	5	5,599	1,158
Veneer logs	518	2,250	0	0	2,223	0
Pulpwood	--	27	174	--	--	--
Commercial poles	0	0	837	0	0	0
Mine timbers	1	388	968	0	1,210	4
Miscellaneous industrial wood ^{3/}	0	26	3	0	0	3
Posts, fuelwood, miscellaneous farm timbers	--	56	1,338	8	306	60
Total	3,015	26,481	8,720	13	9,338	1,222
Percent of total	5.9	52.1	17.1	(5/)	18.4	2.4
					4.1	100.0

^{1/} Includes white, subalpine, and corkbark firs.

^{2/} Includes blue spruce.

^{3/} Includes juniper, piñon pine, aspen, and cottonwood.

^{4/} Includes house logs, excelsior bolts, match stock, and similar items.

^{5/} Less than 0.05 percent.

Table 57.—Output of roundwood products from Colorado timberlands by land ownership class and product, 1966

Product	Total volume	Land ownership classes				
		National Forest	Other public	Forest industry ^{1/}	Other private	All ownerships
Saw logs	39,335	70.5	4.4	0.4	2.0	77.3
Veneer logs	5,005	9.8	0	0	0	9.8
Pulpwood	201	.2	.1	0	.1	.4
Commercial poles	837	1.5	0	0	.1	1.6
Mine timbers	2,574	3.8	.1	.1	1.1	5.1
Miscellaneous industrial wood ^{2/}	593	1.0	0	0	.2	1.2
Posts, fuelwood, miscellaneous farm timbers	2,334	4.0	.2	(3/)	.4	4.6
Total	50,879	90.8	4.8	.5	3.9	100.0

^{1/}Lands owned by companies or individuals operating wood-using plants.

^{2/}Includes house logs, excelsior bolts, match stock, and similar items.

^{3/}Less than 0.05 percent.

NEVADA

Table 58.—*Output of roundwood products from Nevada timberlands by species and product, 1966*

Product	Species			All species	
	: White pine	: Ponderosa pine	: Other species	: Volume	: Percent
- - - - - Thousand cubic feet - - - - -					
Saw logs	0	2	0	2	0.9
Posts, fuelwood, miscellaneous farm timbers	23	22	176	221	99.1
Total	23	24	176	223	100.0
Percent of total	10.3	10.8	78.9	100.0	

1/ Includes juniper, pinyon pine, and aspen.

Table 59.—*Output of roundwood products from Nevada timberlands by land ownership class and product, 1966*

Product	Total			Land ownership classes		
	: volume	: National Forest	: Other public	: private	: All ownerships	
- MCF - - - - - Percent - - - - -						
Saw logs	2	0.9	0	0	0.9	0.9
Posts, fuelwood, miscellaneous farm timbers	221	18.4	34.5	46.2	99.1	
Total	223	19.3	34.5	46.2	100.0	

1/ No receipts were reported from forest industry lands; i.e., lands owned by companies or individuals operating wood-using plants.

NEW MEXICO

Table 60.—*Mill receipts of saw logs from New Mexico timberlands by species and county of origin, 1966*

County	True/ fir ^{1/}	Engelmann spruce ^{2/}	Pinyon pine	Limber pine	Ponderosa pine	Douglas- fir	Aspen ^{3/}	Volume	Percent	All species	
										International 1/4-inch log rule ^{4/}	
Thousand board feet, International 1/4-inch log rule ^{4/}											—
Bernalillo	515	2	--	--	115	144	--	776	0.3		
Catron	872	--	114	--	25,199	2,566	--	28,751	10.6		
Colfax	1,180	18,463	--	--	8,906	7,765	599	36,913	13.6		
Grant	--	--	2	--	602	--	--	604	.2		
Los Alamos, Rio Arriba	1,012	11,057	570	--	24,646	3,866	597	41,748	15.4		
McKinley	--	61	--	--	37,292	3,874	--	41,227	15.2		
Mora	29	285	--	--	221	540	--	1,075	.4		
Otero	4,424	37	--	992	6,988	7,036	--	19,477	7.2		
Sandoval	5,327	14,716	--	580	30,634	23,596	--	74,853	27.5		
San Miguel	2,281	--	--	110	5,028	2,851	--	10,270	3.8		
Sierra, Socorro, Torrance	--	--	--	102	2,550	426	--	3,078	1.1		
Taos	10	1,625	--	--	1,356	1,356	3,256	7,603	2.8		
Valencia	--	--	742	--	4,233	135	--	5,110	1.9		
Total	15,650	46,246	1,428	1,784	147,770	54,155	4,452	271,485	100.0		
Percent of total	5.8	17.0	.5	.7	54.4	20.0	1.6	100.0			

^{1/} Includes white, subalpine, and corkbark firs.

^{2/} Includes blue spruce.

^{3/} Includes a small volume of cottonwood.

^{4/} Scribner log rule volumes can be approximated by multiplying table volumes by 0.89.

Table 61.—*Output of roundwood products from New Mexico timberlands by species and product, 1966*

Product	Species					All species Volume : Percent
	: True firs ^{1/}	: Engelmann spruce ^{2/}	: Limber pine	: Ponderosa pine	: Douglas-fir	
Saw logs	2,442	7,214	278	23,052	8,448	918
Mine timbers	--	--	--	81	--	155
Posts, fuelwood, miscellaneous farm timbers	--	--	--	1,914	122	6,362
Total	2,442	7,214	278	25,047	8,570	7,435
Percent of total	4.8	14.2	.5	49.1	16.8	14.6
						100.0

^{1/} Includes white, subalpine, and corkbark firs.^{2/} Includes blue spruce.^{3/} Includes juniper, pinyon pine, aspen, and cottonwood.Table 62.—*Output of roundwood products from New Mexico timberlands by land ownership class and product, 1966*

Product	Land ownership classes					All ownerships
	: Total volume	: National Forest	: Other public	: Forest industry ^{1/}	: Other private	
Saw logs	42,352	43.3	5.0	11.8	23.0	83.1
Mine timbers	236	.4	.1	--	(2/)	.5
Posts, fuelwood, miscellaneous farm timbers	50,986	51.3	5.9	13.9	28.9	100.0
Total						

^{1/} Lands owned by companies or individuals operating wood-using plants.^{2/} Less than 0.05 percent.

UTAH

Table 63.—Mill receipts of saw logs from Utah timberlands by species and county of origin, 1966

County	Species						All species		Percent
	True firs ^{1/}	Engelmann spruce	Lodgepole pine	Ponderosa pine	Douglas- fir	Aspen	Cottonwood ^{2/}	Volume	
- - - - - Thousand board feet, International 1/4-inch log rule ^{3/} - - - - -									
Beaver, Iron, Millard	14	231	--	--	--	--	4	249	0.3
Cache, Rich	--	68	22	--	79	--	1	170	.2
Carbon, Emery	--	--	--	56	227	141	--	424	.5
Daggett	--	--	184	303	302	--	--	789	1.0
Duchesne	--	2,083	2,729	3,963	--	--	86	8,861	11.4
Garfield	2,719	7,224	--	12,698	1,811	--	--	24,152	31.5
Kane	17	--	--	1,556	133	--	--	1,706	2.2
San Juan	--	--	--	24,990	--	--	--	24,900	32.1
Sanpete	5	281	--	--	--	462	5	753	1.0
Sevier	--	--	--	--	--	327	--	327	.4
Summit	251	1,159	2,118	--	310	--	--	3,860	5.0
Uintah	--	1,408	4,051	202	--	--	226	5,887	7.6
Utah	170	--	--	--	56	--	56	282	.4
Wasatch	--	2,203	346	--	22	169	791	3,531	4.5
Wayne	--	485	--	848	56	80	--	1,469	1.9
Total	3,176	15,142	9,450	44,616	2,996	1,179	1,191	77,750	100.0
Percent of total	4.1	19.5	12.2	57.4	3.8	1.5	1.5	100.0	

^{1/} Includes white and subalpine firs.

^{2/} Includes other hardwoods and a small amount of juniper.

^{3/} Scribner log rule volumes can be approximated by multiplying table values by 0.89.

Table 64.—Output of roundwood products from Utah timberlands by species and product, 1966

Products	Species					All species		
	True firs ^{1/}	Engelmann spruce	Lodgepole pine	Ponderosa pine	Douglas-fir	Other species ^{2/}	Volume	Percent
- - - - Thousand cubic feet - - - - -								
Saw logs	496	2,362	1,474	6,960	467	370	12,129	86.5
Mine timbers	2	40	394	5	12	2	455	3.2
Miscellaneous industrial wood ^{3/}	26	210	342	0	0	157	735	5.2
Posts, fuelwood, miscellaneous farm timbers ^{4/}	0	7	306	11	6	381	711	5.1
Total	524	2,619	2,516	6,976	485	910	14,030	100.0
Percent of total	3.7	18.7	17.9	19.7	3.5	6.5	100.0	

^{1/}Includes white and subalpine firs.

^{2/}Includes juniper, pinyon pine, aspen, cottonwood, and other hardwoods.

^{3/}Includes converter poles, excelsior bolts, and similar items.

^{4/}Includes volume of commercial poles to avoid disclosure of individual operations.

Table 65.—Output of roundwood products from Utah timberlands by land ownership class and product, 1966

Product	Total volume	Land ownership classes		
		National Forest	Other public	All private ^{1/}
		MCF	Percent	Percent
Saw logs	12,129	78.7	4.0	3.8
Mine timbers	455	3.1	(2/)	.1
Miscellaneous industrial wood ^{3/}	735	3.7	0	1.5
Posts, fuelwood, miscellaneous farm timbers ^{4/}	711	4.4	.1	.6
Total	14,030	89.9	4.1	6.0
				5.1

^{1/}No receipts were reported from forest industry lands; i.e., lands owned by companies or individuals operating wood-using plants.

^{2/}Less than 0.05 percent.

^{3/}Includes converter poles, excelsior bolts, and similar items.

^{4/}Includes volume of commercial poles to avoid disclosure of individual operations.

MAPS

Major Timber Industries in the
Rocky Mountain States

Saw Log Output by Counties, 1966,
Rocky Mountain States



IN THE

ROCKY MOUNTAIN STATES

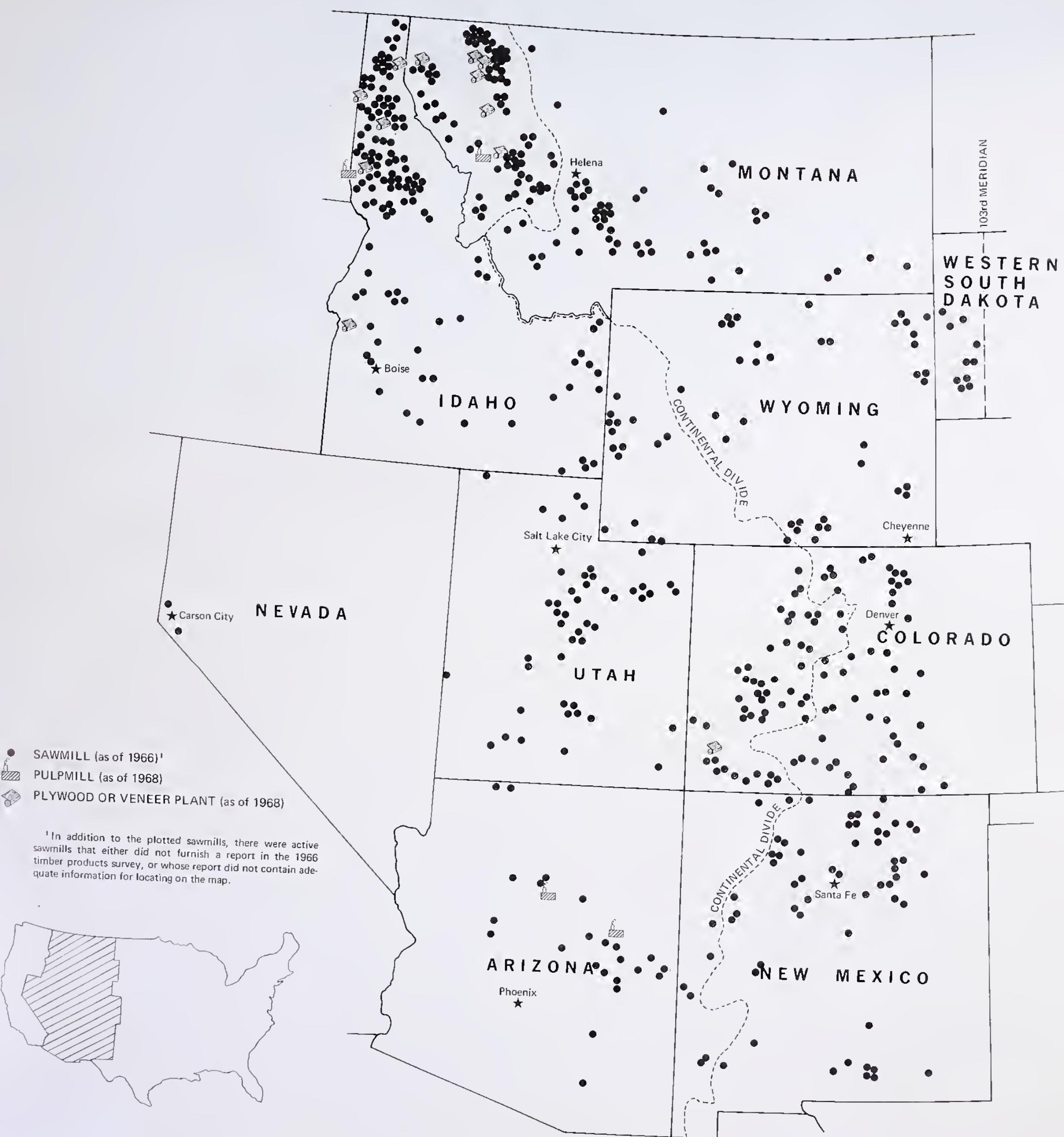
INTERMOUNTAIN FOREST AND RANGE EXPERIMENT STATION

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MAJOR TIMBER INDUSTRIES
IN THE
ROCKY MOUNTAIN STATES
INTERMOUNTAIN FOREST AND RANGE EXPERIMENT STATION
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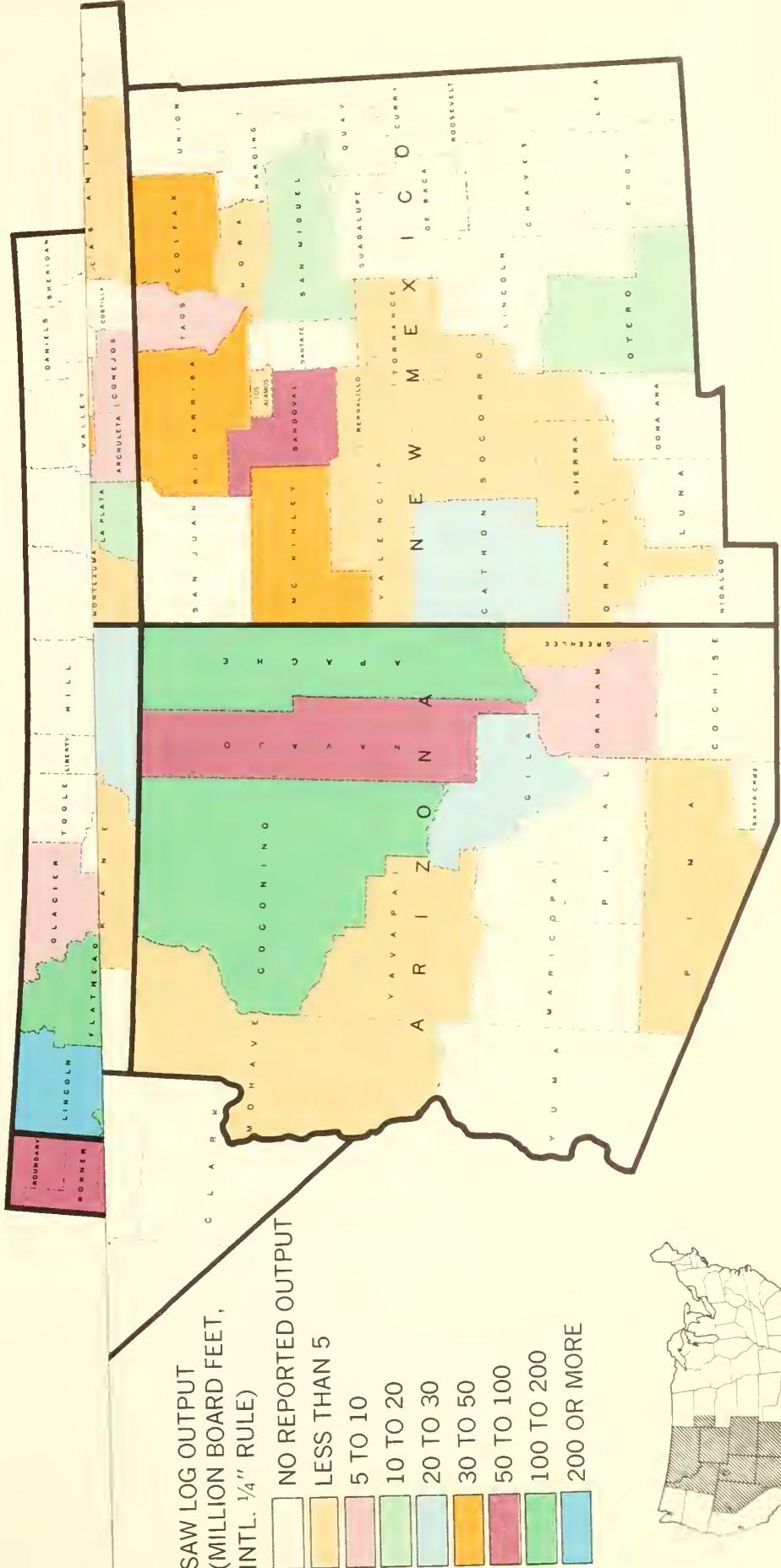


ROCKY MOUNTAIN STATES

INTERMOUNTAIN FOREST AND RANGE EXPERIMENT STATION

FOREST SURVEY

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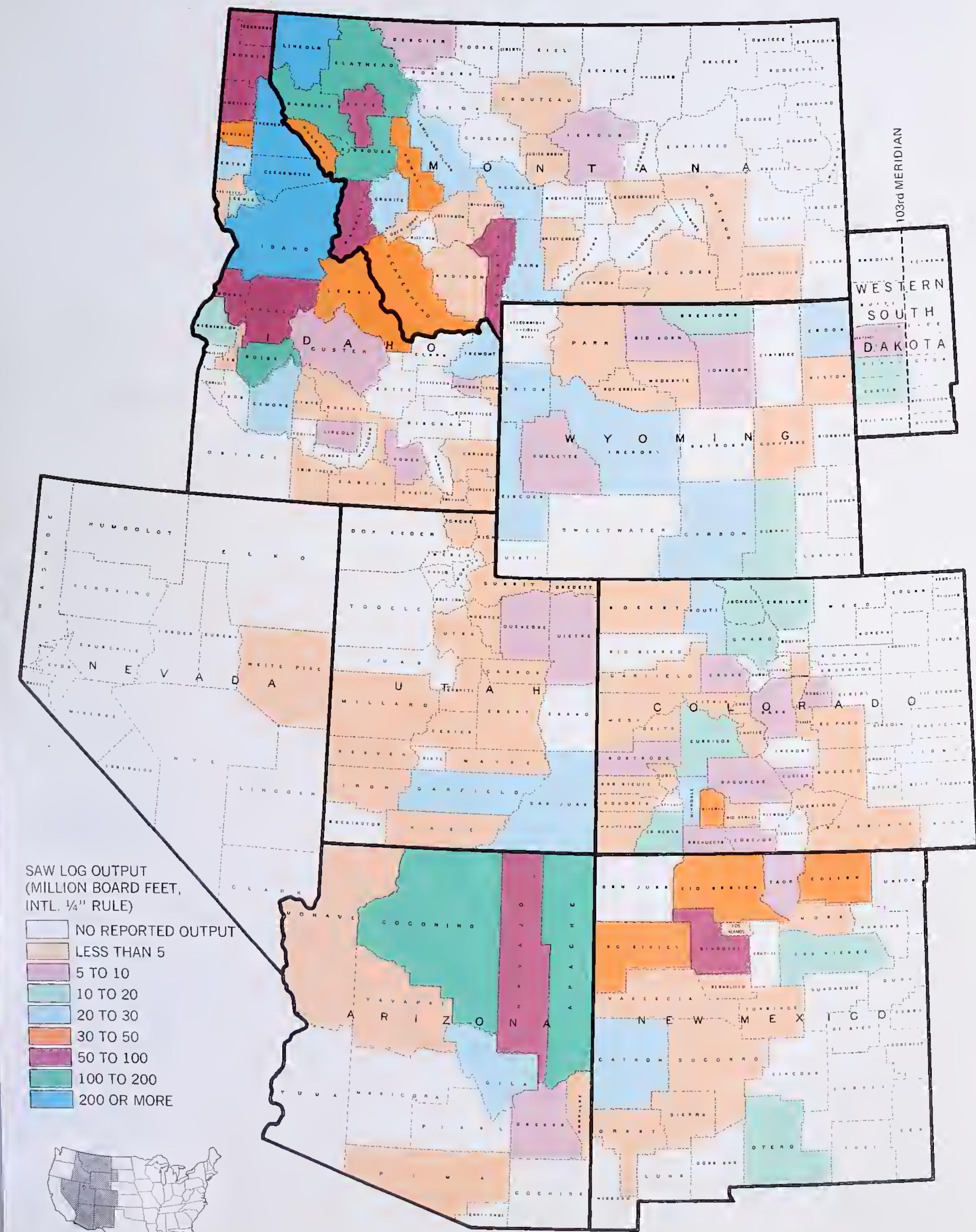


ROCKY MOUNTAIN STATES

INTERMOUNTAIN FOREST AND RANGE EXPERIMENT STATION

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Headquarters for the Intermountain Forest and Range Experiment Station are in Ogden, Utah. Field Research Work Units are maintained in:

Boise, Idaho
Bozeman, Montana (in cooperation with
Montana State University)
Logan, Utah (in cooperation with Utah
State University)
Missoula, Montana (in cooperation with
University of Montana)
Moscow, Idaho (in cooperation with the
University of Idaho)
Provo, Utah (in cooperation with
Brigham Young University)

ABOUT THE FOREST SERVICE . . .

As our Nation grows, people expect and need more from their forests — more wood; more water, fish, and wildlife; more recreation and natural beauty; more special forest products and forage. The Forest Service of the U.S. Department of Agriculture helps to fulfill these expectations and needs through three major activities:



- Conducting forest and range research at over 75 locations ranging from Puerto Rico to Alaska to Hawaii.
- Participating with all State forestry agencies in cooperative programs to protect, improve, and wisely use our Country's 395 million acres of State, local, and private forest lands.
- Managing and protecting the 187-million acre National Forest System.

The Forest Service does this by encouraging use of the new knowledge that research scientists develop; by setting an example in managing, under sustained yield, the National Forests and Grasslands for multiple use purposes; and by cooperating with all States and with private citizens in their efforts to achieve better management, protection, and use of forest resources.

Traditionally, Forest Service people have been active members of the communities and towns in which they live and work. They strive to secure for all, continuous benefits from the Country's forest resources.

For more than 60 years, the Forest Service has been serving the Nation as a leading natural resource conservation agency.